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ABSTRACT

The U.S. Department of Agriculture's Nutrition Education and Training Program (NET) provides nutrition information and instructional resources for children, parents, educators, and food service personnel. This document describes the evaluation methods of the NET Program in Texas in fiscal year 1991, reports evaluation results, and offers recommendations. Section I provides an executive summary of the evaluation activities. Section II describes the NET Program's outreach activities, including nutrition workshops, a lending library, distribution of instructional materials, and public presentations. Section III discusses the coordination of library services between the NET Program and the Texas School Food Service Association. In section IV, results of the evaluation of the NET Program's Nutrition and Life Sciences workshop are presented. Section V reports on the development of a series of ethnic recipes and a 3-week menu to be used in day care centers and home day care facilities. Section VI reports on the general evaluation of the NET Program. Appendices include the evaluation instruments used in the NET Program, the Nutrition and Life Sciences workshop, and evaluation instruments used in the ethnic recipes and menu project. (BC)

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FINAL EVALUATION REPORT

OF

TEXAS NUTRITION EDUCATION AND TRAINING PROGRAM FOR FEDERAL FISCAL YEAR 1991

TEXAS
NET
NUTRITION EDUCATION & TRAINING

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TABLE OF CONTENTS

Page

I. Executive Summary 1

II. Outreach of the NET Program 11

Introduction 11
Workshops 14
NET Lending Library 23
Development and Distribution of Instructional Materials 35
Presentations, Exhibits, and Publications 41
Coordination with Related Publicly Supported Programs 43
Summary 45
Recommendations 46

III. Evaluation of the Effect of Coordination with TSFSA on Library Circulation 48

Introduction 48
Method 49
Results and Discussion 49
Recommendations 54

IV. Evaluation of the Nutrition and Life Sciences Workshop 55

Introduction 55
Method 57
Results and Discussion 61
Recommendations 74

V. Evaluation of the Ethnic Recipes/Cycle Menu Project 76

Introduction 76
Method 79
Results and Discussion 82
Recommendations 92

VI. General Evaluation of the NET Program 95

Introduction 95
Program Resources 96
Program Activities 97
Meta-Analysis of Program Outcomes 99
Results and Discussion 100
Recommendations 103

Page

Appendices 104

Appendix A: Evaluation Instruments Used In NET Program Outreach 105

Appendix B: Evaluation Instruments for Nutrition and Life Sciences Workshop 111

Appendix C: Evaluation Instruments for Ethnic Recipes/Cycle Menu Project 126

LIST OF TABLES

Table Page

1 Number and Percent of Participants in Workshops Conducted in 1991 16

2 Workshop Participant Food Programs 21

3 Themes of Materials Circulated in FFY 1991 27

4 Type of Library Materials Circulated in FFY 1991 . . . 28

5 Materials Mailed to Facilities of Workshop Participants in 1991 39

6 NET Presentations During FFY 1991 41

7 NET Exhibits and Fairs During FFY 1991 42

8 NET Publications and News Releases During 1991 43

9 Participation in NET From FFY 1985-1991 45

10 Material Circulated and Number and Percent of Users . 51

11 Means and Standard Deviations for the Knowledge Tests in the Pilot Study 62

12 Percent of Correct Responses to Test Items in the Pilot Study 63

13 Pre and Post Mean Scores on Each Attitude Scale in the Pilot Study 65

14 Means and Standard Deviations of the Training Evaluation Scales in the Pilot Study 67

15 Means and Standard Deviations for the Knowledge Test in the Final Workshop Delivery 69

16 Percent of Correct Responses to Test Items in the Final Workshop Delivery 70

17 Pre and Post Mean Scores on Each Attitude Scale in the Final Workshop Delivery 72

18 Comments and Suggestions to Improve the Workshops . . 73

19 Number and Percent of Respondents 81

Table		Page
20	Number and Percent of Recipe Users and Non-Users	83
21	Number and Percent of Times Each Recipe Was Used	84
22	Recipes Modified and Type of Modification	87
23	Problems Encountered in Preparing the Ethnic Recipes	89
24	Suggestions for Improving the Ethnic Recipes	90
25	Reasons for Substituting Items in the Cycle Menu	91
26	Suggestions for Improving the Cycle Menu	92
27	Texas NET Program Resources for the Past Seven Years	96
28	Texas NET Program Activities for the Past Seven Years	98
29	Results of Meta-Analysis of Program Outcomes	100

LIST OF FIGURES

Figure — Page

1 Facilities of Workshop Participants in the Past Three Years 18

2 Function of Workshop Participants in the Past Three Years 19

3 Training Hours Delivered to Educators and Food Service Personnel in 1991 20

4 Number of Children Reached by Workshop Participants 22

5 Monthly Circulation of Library Materials in FFY 1990 and 1991 26

6 Use of Circulated Library Materials 29

7 Function of Library Borrowers in 1991 30

8 Facilities of Library Borrowers in FFY 1991 31

9 Borrower Evaluation of Library Materials in 1991 . . . 33

10 Sources of Information About the NET Library in FFY 1990 and 1991 34

11 Evaluation of Library Materials Used in TSFSA Training 53

I. EXECUTIVE SUMMARY

BACKGROUND

The Nutrition Education and Training (NET) program is one of the U.S. Department of Agriculture (USDA) Child Nutrition Programs (CNP). The goal of the NET program is to promote optimal health and well-being of the nation's children through improved nutrition. To achieve its goal, the NET program provides nutrition information and instructional resources to children, and to key individuals involved in their learning environments, to include parents, educators, and food service personnel.

Since the NET program supports and enhances the other USDA child nutrition programs, the Texas NET program is coordinated through the Nutrition Services of the Texas Department of Human Services (TDHS), which also administers the National School Lunch Program (NSLP), the School Breakfast Program (SBP), the Special Milk Program (SMP), the Child and Adult Care Food Program (CACFP), and the Summer Food Service Program (SFSP).

Consistent with federal regulations governing the NET program, formal evaluations of program activities are conducted annually. The aim of these evaluations is to assess training needs and to determine the effectiveness of the program in achieving its goal. The results of the evaluations are used to improve the ongoing activities of the program and to adjust the program's objectives for the following years.

OUTREACH OF THE NET PROGRAM

To achieve its goal, the NET program attempts to extend its education and training services to as many of the target populations as possible. NET uses several interventions to reach its target populations, including workshops, most of which are developed by NET staff and delivered by contract dietitians; a lending library; development and distribution of instructional materials; presentations, exhibits, and publications; and coordination with related publicly supported programs.

Staffing levels and participation in fiscal year 1985 were used as baseline data to set goals for 1991. The overall goals for FFY 1991 were set at 1,732 participants attending NET workshops and at 4,875 individuals using the NET library. Information about program priorities was used in adjusting the goals for different target populations. The 1990-1991 State Plan indicated that approximately

40% of NET's efforts would be directed at public school populations and 60% at other target populations.

Findings:

Workshops:

The 1990-1991 NET State Plan sets the goal for the number of nutrition workshops conducted in 1991 at 60, and food service workshops at 50. A total of 164 workshops were conducted in FFY 1991. The number of nutrition workshops conducted was 92, while the number of food service workshops was 71. Thus, NET exceeded the goal in both cases. One train the trainer workshop was conducted in two sessions; one session in November and another session in May.

In FFY 1991, there were 3,375 participants in NET workshops, which was almost double the goal of 1,732 participants. However, participants from public schools were 5% less than the anticipated goal. This may be due to delay in scheduling one of the AAT workshops (Nutrition and Life Sciences) and shortage in the State's teacher training funds available for travel and substitute teaching.

The increase in the number of workshops conducted and the number of workshop participants resulted in considerable increases in the number of training hours (over two and one-third times those of 1990), and the number of children reached (about twenty-six times those reached in 1990).

The number of children reached through different groups participating in NET workshops was not proportional to the number of participants. Differences in the ratios of educators to children and food service personnel to children in schools and child care facilities, resulted in the number of children reached in schools being twice that of the number of children reached in child care facilities.

NET Lending Library:

A new audiovisual catalog was developed in 1990, and 2,489 copies of the catalog were distributed to schools and child care facilities during the first quarter of FFY 1991. In addition, 606 new library acquisitions were added to the library collection. The majority of circulated materials were audiovisual resources.

The 1991 goal for library participation was set at 4,875; 1,950 for public school populations and 2,925 for other populations. The number of children reached by educators and food service personnel in public schools was 13,440, about seven times the goal set for public school populations. The number of children reached in child care facilities was 4,783, more than one and one-half times the goal.

Over one-third of the circulated library items were rated as excellent in content, method of presentation, and usefulness to audience. Less than 2.0% of the circulated items were rated as poor.

Professional meetings were the most frequent source of information about library services, followed by word of mouth, followed by mailed or published information.

Development and Distribution of Instructional Materials:

Two workshops were revised in FFY 1991. NET also produced two public service announcements (PSA's) on breakfast. A poster and menu backs were developed and distributed as part of a campaign to promote breakfast to young children and teenagers.

In addition, NET awarded the Texas Department of Agriculture (TDA) a grant to fund the production of nutrition education materials for Project TEACH. Project TEACH is a statewide project to teach children K-3 about Texas agricultural products and good eating habits. Materials included posters, menus and recipes, and fact and activity sheets.

Each workshop participant received a workbook and/or handouts. Selected materials were mailed to the work facilities of participants to enable them to use the materials in applying knowledge and skills learned in the workshops. Thus, 14,505 instructional materials were distributed in 1991, reflecting a 23.3% increase over 1990.

Fifteen hundred copies of the breakfast poster and of the NET Library and Workshop brochures were distributed to schools and child care facilities and at professional meetings and exhibits. The total number of promotional materials distributed in 1991 was 10,140.

Presentations, Exhibits, and Publications:

In 1991, nine presentations were given to different target groups. The goal for the number of NET exhibits held in 1991 was five; however, only four NET exhibits were held. NET fell one exhibit short of the set goal. In addition, eight newspaper articles on nutrition and news releases were published during 1991. Only one of these publications was a technical article. A television interview was conducted with the NET Coordinator and the Food Service Director of Austin Independent School District to discuss the importance of breakfast for children.

Coordination With Related Publicly Supported Programs:

The Texas Nutrition Resource Council was established in June 1990, as a result of NET's efforts to establish a major statewide cooperative linkage between high level food and nutrition policy stakeholders. The Council meets quarterly to discuss funding possibilities, overlapping interests, legislation, and prevention of duplication of efforts.

In 1991, the NET Coordinator represented NET as a member of a writing committee sponsored by the Texas Education Agency (TEA) to develop a comprehensive nutrition and health curriculum for grades K-12. Another aspect of the coordination between NET and TEA is participation in the breakfast promotion campaign and development of the PSA's, poster and "menu backs" mentioned above. Coordination with TDA resulted in NET awarding a grant to TDA to fund project TEACH that promotes Texas agricultural products to children in grades K-3.

A Texas School Food Service Association (TSFSA) initiative was established early in 1990 with the NET library, and renewed in 1991. NET agreed to purchase audiovisual materials to support the certification training of food service personnel statewide.

NET was also represented on committees sponsored by the American Cancer Society, the American Heart Association, and the Dietary Guidelines Coalition.

Recommendations:

1. Since some workshops were conducted less frequently, and with fewer number of participants than the minimum required, there is a need to reconsider the procedures followed in scheduling and delivering the workshops.

2. Because the goal set for the number of public school participants in NET workshops was not met, NET should renew its efforts in approving, developing, and conducting AAT workshops and coordinate teacher training efforts with TEA.

3. Since a flux in library circulation resulted from coordination with TSFSA, and since similar increases in NET's outreach resulted from coordination with TEA, continued coordination with professional associations and agencies that are interested in training their members is recommended.

4. Reviews and presentations of new audiovisual material acquisitions in schools and professional meetings and journals are recommended to increase the library outreach and NET's outreach in general.

5. Since increase in library circulation to day care centers and family day homes was less than expected, there is a need to enhance the library outreach efforts directed to these facilities.

6. Since few parents were reached through NET's interventions in 1991, it is recommended that NET develop and deliver presentations and hold fairs in the annual PTA meetings and in the association's school meetings throughout Texas.

7. There is a need to renew NET's interest in professional writing and publishing in professional periodicals, to stress NET's role as a leading authority in nutrition education.

8. NET actively pursued coordination efforts with other publicly supported programs. Because this coordination is positively affecting NET's outreach, it is recommended that these efforts continue and extend to more public, community, and local organizations.

EVALUATION OF THE EFFECT OF COORDINATION WITH TSFSA ON LIBRARY CIRCULATION

This evaluation was conducted to assess the increase in library circulation as a result of coordination efforts with TSFSA and to identify and evaluate the library items used in the training.

Findings:

There was a 24.3% increase in library circulation as a result of the TSFSA coordination. This increase represents about one-half (47.3%) of the circulation of the food service management/training items.

Sixty-seven items were identified and used in the training. These items pertained to preparation of specific foods, food safety, general skills needed for food service personnel, such as communication skills, food procurement, and food serving--in that order.

Over one-third of the items were rated as excellent in content, method of presentation, and usefulness to the audience. Less than 2.0% of the items were rated as poor. In general, the ratings of these items were lower than the ratings of the entire items circulated in FFY 1991.

Recommendations:

1. Because of the noticeable increase in the library circulation as a result of the coordination with TSFSA, the library collection should be classified and listed according to the intended target population. These lists may be distributed to the facilities and associations of the target populations for selection and use.

2. Similar coordination efforts should be attempted with other associations that deliver training, such as the PTA and the American Dietetic Association.

3. Ratings of library items used in the TSFSA training should be used to improve the set of items identified for this purpose.

4. To further improve the quality of materials in the library collection and to tailor them to the needs of the target populations, items should be reviewed and evaluated by samples of the target populations and/or their educators, in addition to the NET trainers.

EVALUATION OF THE NUTRITION AND LIFE SCIENCES WORKSHOP

This study was conducted to determine how well the Nutrition and Life Sciences workshop helped participants master nutrition related knowledge and attitude learning objectives, and how much the workshop participants were satisfied with the training they received during the workshop.

A total of three workshops were conducted in 1991. There were 16 participants in these workshops. The first workshop was used to pilot the workshop. A pretest, post test, and follow-up test were developed to measure the participants' mastery of factual and operational knowledge presented during the workshop. An attitude scale was developed to measure participants' attitudes toward workshop content. A standardized training evaluation form was used to measure participants' satisfaction with the workshop and report their suggestions for improvement.

The workshop was developed and evaluated in three stages: (1) formative evaluation stage, (b) pilot stage, and (c) final delivery stage.

During the process of workshop development, the Workshop Coordinator consulted the staff of Penn State University, NET staff, and NET contract trainers.

The curriculum guide and materials were then presented to the NET trainers during the semi-annual training conducted by NET. After review of workshop materials and activities, the trainers took the pretest and responded to the attitude scale. Suggestions on how to improve the workshop were given and discussed. The workshop curriculum, materials and evaluation instruments were revised accordingly. Additional revisions were made in the workshop after the pilot study and before statewide delivery.

Findings:

Workshop participants showed performance improvements as measured by the pretest and the post test in both the pilot and the final workshop delivery. Increase in the post test means and decrease in standard deviations indicated considerable improvement in the performance of participants with low pretest scores. There was no similar improvement in participants' performance on the attitude scales.

Participants' ratings of the workshop in general were acceptable on all but one scale. Participants did not feel that the workshop provided them with sufficient opportunities for practice. Higher ratings were evident on all scales related to workshop materials and lower ratings were given to the instructor's scales.

Recommendations:

1. There is a need to further revise the workshop instruction related to the first learning objective, namely, the "Vee" heuristic method of inquiry.

2. Related to the previous recommendation, there should be a shift in workshop goals and priorities from nutritional facts to methods of teaching nutrition and relaying these facts to the target populations.

3. Procedures followed in workshop scheduling and delivery need careful consideration. When decisions are made regarding these procedures, NET should adhere to these procedures for it to be meaningful to prospective participants.

4. NET should provide more incentives for workshop participants than credit hours. This could be done through negotiation and coordination with agencies and associations interested in training their members in nutrition and health.

EVALUATION OF THE ETHNIC RECIPES/CYCLE MENU PROJECT

This study was conducted to assess the value of developing a set of ethnic recipes and a cycle menu that incorporates the ethnic recipes with the standard recipes, and distributing them to day home sponsors and CACFP contractors in day care centers.

Copies of an opinion survey were mailed to 150 randomly selected CACFP day care center contractorsin Texas and 238 randomly selected day home providers stratified by sponsor.

Findings:

A total of 118 day care center contractors and 159 day home providers responded. About two-thirds (61.7%) of the day care center contractors and 44.3% of the providers reported that they used the recipes. Some recipes were used significantly more often than others.

When the respondents were asked if having the recipes standardized for 12 and 24 servings assisted them in adjusting the recipes for the number of children they were serving, 86.3% of the respondents said it did. Over 91% of the contractors said that the list of contributions to the meal pattern requirements were easily adjustable for the age levels of children in their care. The majority of the respondents (85.8%) said that the ingredients were not difficult to find. About one-third of the respondents said that the cost of preparing the ethnic recipes was higher than the standard recipes, compared to 67.9% who said that it was not. Significantly more child care center contractors than day home providers adjusted the recipes. The respondents modified thirteen out of twenty-seven recipes.

There was no significant difference between the ethnic recipes and the standard recipes with regard to cost, preparation time, or plate waste. About two-thirds of the respondents reported that they used the cycle menu. Over two-thirds of the respondents said that having the menu helped reduce the time required for menu planning. Several suggestions were offered to improve the recipes and the menu.

Recommendations:

1. The two-step distribution procedure used in distributing the ethnic recipes and cycle menu to day home providers was not effective. Less expensive copies may be produced and distributed directly to the facilities of the intended users.

2. Instead of the twenty-seven ethnic recipes, the project may continue with half or one-third that number. Developing the recipes and introducing them in series over a long period of time allows for incorporating the ethnic recipes with the regular recipes in a three-week cycle menu.

3. It is recommended that substitutions to expensive ingredients, alternatives to allow for availability of foods,and short-cuts in recipe preparations be incorporated in the recipes and menu.

4. As suggested by the respondents, the ethnic recipes would be more suited to the children if more finger foods and snacks are included.

5. As suggested by the respondents, and due to the large Spanish speaking population in Texas, it is recommended that the recipes and menu be translated into Spanish.

6. As suggested by the respondents, and in line with the Dietary Guidelines for Americans, there is a need to add more bread and bread alternates to the cycle menu.

7. There is a need to continue promotion of the ethnic recipes and cycle menu after incorporating the above recommended improvements.

GENERAL EVALUATION OF THE NET PROGRAM

The purpose of this study was to assess the overall program performance for FFY 1991. The results of the evaluations conducted during the year were combined to produce an index of the program effectiveness.

Findings:

NET program funding increased 74.6% over the program's budget for FFY 1985 and 61.2% over 1990. The second half of 1991 witnessed an increase in NET staff similar to the increase in the budget. The Workshop Coordinator position became a full-time position and a NET Assistant position was created. The number of contracted instructors rose from 16 in 1990 to 18 in 1991. Thus, in 1991 the total number of NET staff increased about 21% over 1990.

Expansion in program resources resulted in expansion in program activities in most areas. The number of workshops conducted rose from 103 workshops in 1990 to 164 workshops in 1991, an increase of more than 59%.

Acquisition and circulation of library materials increased considerably over 1985 and 1990, perhaps due to the increase in the number of resources allocated to the library. In 1991, library acquisitions were almost twice those of 1990. Monthly circulation of library items was 18.5% more than circulation in 1990. Number of catalogs distributed were more than five times those distributed in 1990.

The number of mini-grants and material acquisitions doubled in 1991. The number of distributed materials increased 109.3% over 1990. In 1991, the NET program participation was more than one hundred times the participation in 1985, and more than 24 times the participation in 1990. Considerably more educators and food service personnel were reached in FFY 1991, and each of these reached several children. Adding the number of educators, food service personnel, and children accounts for the exponential increase in participation.

The vote counting method for program meta-analysis was applied to integrate results of evaluations conducted during FFY 1991. Thirty-two evaluations were conducted to estimate the effectiveness of the main aspects of the program. Twenty-three of these evaluations were positive, three were nonsignificant, and six outcomes were negative.

Recommendations:

1. Since priorities are set for reaching different target populations in the NET state plan, an action plan must follow to specify suitable means of implementation. The program staff must systematically identify, implement, and evaluate procedures periodically to assess the effectiveness of these procedures in reaching the targeted priority populations.

2. Since the last needs assessment study was conducted in 1984, there is a need to conduct a major needs assessment study to identify NET services required for various target populations, including direct services to children and their parents.

3. There is a need to follow-up on the results of evaluating different NET activities. This would allow for improvement based on results of the evaluation. Results of the evaluations conducted in 1991 indicate the need for improvement in procedures, materials, and/or methods.

II. OUTREACH OF THE NET PROGRAM

INTRODUCTION

Background:

The Nutrition Education and Training (NET) program is one of the Child Nutrition Programs (CNP) of the United States Department of Agriculture (USDA). The program was established in 1977 in an amendment to the Child Nutrition Act (public law 95-166). The program is administered by the USDA through grants to state agencies. The Texas Department of Human Services (TDHS) received a grant from the Texas Education Agency (TEA) in 1979, which allowed expansion of the NET program into child care facilities. In 1982, when federal funding for the program was reduced from $26 million to $5 million nationwide, TEA ceased to participate and TDHS assumed responsibility for all NET program activities in Texas.

The NET program supports the other USDA child nutrition programs, namely, the National School Lunch Program (NSLP), the School Breakfast Program (SBP), the Special Milk Program (SMP), the Child and Adult Care Food Program (CACFP), and the Summer Food Service Program (SFSP). In Texas, NET is part of the Nutrition Services department within the Client Self-Support Services division of the TDHS.

Goal:

The goal of the NET program is to promote optimal health and well-being of the nation's children through improved nutrition. To achieve its goal, the NET program provides nutrition education and instructional resources for children and for key individuals in the learning environments of children. Parents or guardians, care givers and teachers, as well as food service personnel who prepare meals for the children are considered individuals who affect the nutritional status of Texas children.

Four goal areas were identified in NET's 1990-1991 State Plan. They are to:

1. assure that children have opportunities to learn about and to practice good eating habits in schools and child care facilities participating in USDA's Child Nutrition Programs, by providing training and materials for children, teachers, and food service personnel;

2. facilitate integration of effective nutrition learning activities--including use of the cafeteria as a learning laboratory--into instruction at all grade levels from preschool through high school, by providing information and instruction to help teachers improve their child-nutrition-related knowledge, attitudes, and behaviors;

3. assure that nutritious, appealing and safe meals and snacks are served in schools and child care facilities by providing information and training to help food service personnel improve their child-nutrition-related knowledge, attitudes, and behaviors; and,

4. provide support for nutrition education and food service management practices in schools and child care facilities participating in the reimbursement programs, by developing educational materials, keeping the lending library collection current, acquiring and distributing materials, and coordinating services with other public-sector agencies interested in promoting children's health and well-being through improved nutritional status.

To achieve its goal, the NET program attempts to extend its education and training services to as many of the targeted populations as possible. Participation data are used as a determinant of program continuation. States granted NET program funds are required to submit an annual report--the FNS 42--describing the numbers of children, educators, and food service personnel receiving nutrition education and training during the fiscal year. The report must be completed within a specified interval after the close of the federal fiscal year in order for the state to receive the program grant for the succeeding year.

In order to assure that the Texas NET program reaches as many of the target population as possible, annual participation goals are set for each of the program's major activities and for each of its target populations. Goals are based on current priorities, current staffing, and prior participation figures. Actual participation is monitored and compared against the goal for the year. Information about goal attainment then is used in establishing objectives and making plans for the following year.

Goals for NET's Outreach:

Data about staffing levels and participation in fiscal year 1985 were used as a baseline in setting goals for 1991. Using 1985 as baseline is appropriate because all of the designated NET staff positions were filled during 1985 and evaluation studies demonstrated that the program was both challenging and successful that year.

During 1985, there were approximately 6 full-time equivalent NET staff positions that supported NET workshops and 2.5 positions that supported the NET lending library. The staff-to-participant ratios during 1985 were 1:400 for NET workshops and 1:1500 for the NET lending library.

In 1991, several staff turnovers resulted in disruptions in program services. The positions of NET Program Coordinator and Workshop Coordinator were vacant for almost three months, and three persons held the position of the NET Program Coordinator. On the positive side, the position of the Workshop Coordinator went from part-time to full-time during the last two months of FFY 1991. A full-time "NET Assistant" position was created and filled during the second half of the year. Following is an estimate of NET's workshop and library full-time equivalent positions in 1991.

Workshops:

0.58	Workshop Coordinator
2.50	Workshop Instructors
1.25	Clerks
4.33	Total

Library:

1.00	Program Specialist
1.00	Librarian
1.00	Material Evaluator (Workshop Instructors)
0.25	Clerk
3.25	Total

Thus, there were approximately 4.33 full time equivalent staff positions in support of the workshops and 3.25 staff positions in support of the library. By substituting these figures in the staff-to-participant ratio, overall goals were set for FFY 1991 at 1,732 individuals participating in NET workshops and 4,875 individuals for the library.

Information about program priorities was used in adjusting the goals for different target groups. The 1990-1991 State Plan indicated that approximately 40% of NET's efforts would be directed at public school populations and 60% at other target populations. Accordingly, the goal for workshop participants was set at 693 for public school populations and 1,039 for other populations. The goal for library circulation was set at 1,950 individuals for public school populations and 2,925 individuals for other populations.

NET's Outreach Interventions:

NET's outreach to its target populations is achieved through multiple interventions which include:

- workshops developed by NET staff and delivered by contract dietitians
- circulation of the NET library collection
- development, revision, and circulation of curricula and instructional materials on nutrition education and food service management
- presentations, exhibits, and publications on nutrition education, food service management, and the NET program in general
- coordination with related publicly supported nutrition programs being carried out within the state

Following are NET's efforts to reach Texas children through each intervention and the outcomes of these efforts.

WORKSHOPS

Introduction:

Conducting nutrition education workshops to prevent disease and enhance the well-being of the State's children is a major activity of the NET program. The NET program provides information and resources to instruct teachers, child care providers, and food service personnel on the fundamentals of nutrition and how to convey this information to motivate children to make healthy food choices. The expected outcomes are improved nutritional status for children and reduced food waste in schools and child care facilities.

NET has developed a total of 23 workshops since 1985. Workshop topics include nutrition education, physical fitness, food service management, menu planning, and sanitation. Contract dietitians conduct the workshops throughout Texas and provide free materials to eligible participants. Participants receive certificates verifying hours of attendance.

In 1986, interagency agreements and curriculum modifications were negotiated to obtain TEA's approval for two NET workshops to be made available to public school teachers for advanced academic training (AAT). Two additional workshops were approved by TEA for

AAT credit in 1988. Since public school teachers are required to earn AAT credits to maintain teaching certification in Texas, NET's AAT workshops have proved to be very helpful in increasing participation in the NET program. However, budget cuts in the State of Texas have resulted in decrease of funds available for teacher training. This has caused a decrease in the number of public school teachers who participated in NET workshops during FFY 1991.

Method of Evaluating the Workshops:

Continuous evaluation of NET workshops resulted in revisions and improvements of the content of these workshops, as well as in the methods and materials used in their delivery. The performance of the workshop participants is evaluated using knowledge tests and attitude scales. In some instances, the behavior of the participants is evaluated as well. For example, the menus planned by food service personnel were evaluated before and after their participation in the Menu Planning and Kitchen Economy workshop to find out if their compliance with the CACFP regulations increased as a result of their participation.

Data on the effectiveness of a workshop as a whole are collected from the workshop participants using a TDHS standard course evaluation report. In addition, the performance of the workshop instructors is observed and evaluated periodically by NET staff using a workshop instructor evaluation form. Copies of the course evaluation report and the instructor evaluation form are included in Appendix A of this report.

Data on the number of workshop participants and their functions, work facilities, ethnic backgrounds, and the number of children they reach, are collected on each workshop for administrative purposes and to evaluate workshop participation. A registration form is used to collect these data. A copy of the registration form is included in Appendix A.

Workshop Participation:

Workshops Conducted:

The NET State Plan for 1990-1991 set the goal for the number of nutrition workshops conducted at 60, and for the food service workshops at 50 for both 1990 and 1991. A total of 164 workshops were conducted in FFY 1991. The number of nutrition workshops conducted was 92, and the number of food service workshops was 71. Thus, NET exceeded the goals set for 1991. Table 1 contains the titles and durations of the workshops conducted during FFY 1991 as well as the number and percent of the workshop participants.

TABLE 1

Number and Percent of Participants in NET Workshops Conducted in 1991

Workshop	Workshop Duration in Hours	Number of Times Conducted	Number of Participants	Percent of Participants
Introduction to NET	1.0	2	121	3.6
Sanitation and Health	4.5	15	402	11.9
Advanced Menu Planning	6.0	8	150	4.4
Key Factors in Menu Planning	1.0	6	136	4.0
Kitchen Math and Food Purchasing	6.0	12	207	6.1
Menu Planning and Kitchen Economy	4.0	18	346	10.3
Menu Planning System/Recipe Ideas	2.0	2	21	0.6
Planning Nutritious Snacks	3.0	9	149	4.4
Leader Nutrients/Lending Library	4.0	9	149	4.4
Off to a Good Start for Family Day Care	6.0	9	222	6.6
Understanding the USDA Child Nutrition Meal Pattern	5.5	1	9	0.3
Nutrition and the Preschool Child	6.0	12	260	7.7
AAT/Nutrition for Children	6.0	7	118	3.5
Food Early Choices	2.0	10	241	7.1
Nutrition and Life Sciences	6.0	3	16	0.5
AAT/Nutrition and the Preschool Child	6.0	1	26	0.8
Dietary Guidelines for Americans	4.0	19	400	11.9
Health Habits	1.5	3	85	2.5
Nutrition: The Basics	1.0	4	90	2.7
Get Fit: Nutrition and Fitness	1.0	3	52	1.5
AAT/Nutrition and Physical Fitness	6.0	9	140	4.1
Eating Disorders: Anorexia Nervosa/Bulimia	1.0	1	20	0.6
Train the Trainer Workshop	8.0	1	15	0.4
TOTAL	91.5	164	3,375	100.0

Table 1 shows that the duration of the workshops conducted ranged from one hour to 8 hours. The train the trainer workshop delivered to enhance knowledge and skills of NET contract dietitians is the only workshop that lasts for eight hours. The number of times each workshop was conducted varied also from once to 19 times, which indicates that some workshops were more in demand than others. Fewer than the minimum requirement of 15 participants attended three workshops. These workshops were: (a) Menu Planning System/Recipe Ideas, (b) Understanding the USDA Child Nutrition Meal Pattern, and (c) Nutrition and Life Sciences. There is no apparent relationship between the topic, content, target population or duration of the workshops and the appeal of the workshop to the participants. Further information is needed to find out the variables that make NET workshops more appealing to target populations in order to stress these variables in the following years.

Workshop Participants:

Comparisons between workshop participation in FFYs 1989, 1990, and 1991 indicate that the total number of workshops conducted in 1990 (103) was about 8% less than that of 1989 (112). In 1991, the number of workshops conducted (164) was more than one and one-half times the number of workshops conducted in 1990. The number of workshop participants in 1991 (3,375) increased proportionally over the number of participants in 1991 (2,091).

As stated previously, the workshop participation goal for 1991 was set at 1,732 participants. Thus, actual participation in NET workshops was almost double the expected participation.

Participants' Facilities:

Since NET's goal was to direct 40% of its efforts to public school populations and 60% to other targeted populations the work facilities and the functions of the workshop participants were studied. Figure 1 represents the different facilities of the workshop participants in 1989, 1990, and 1991.

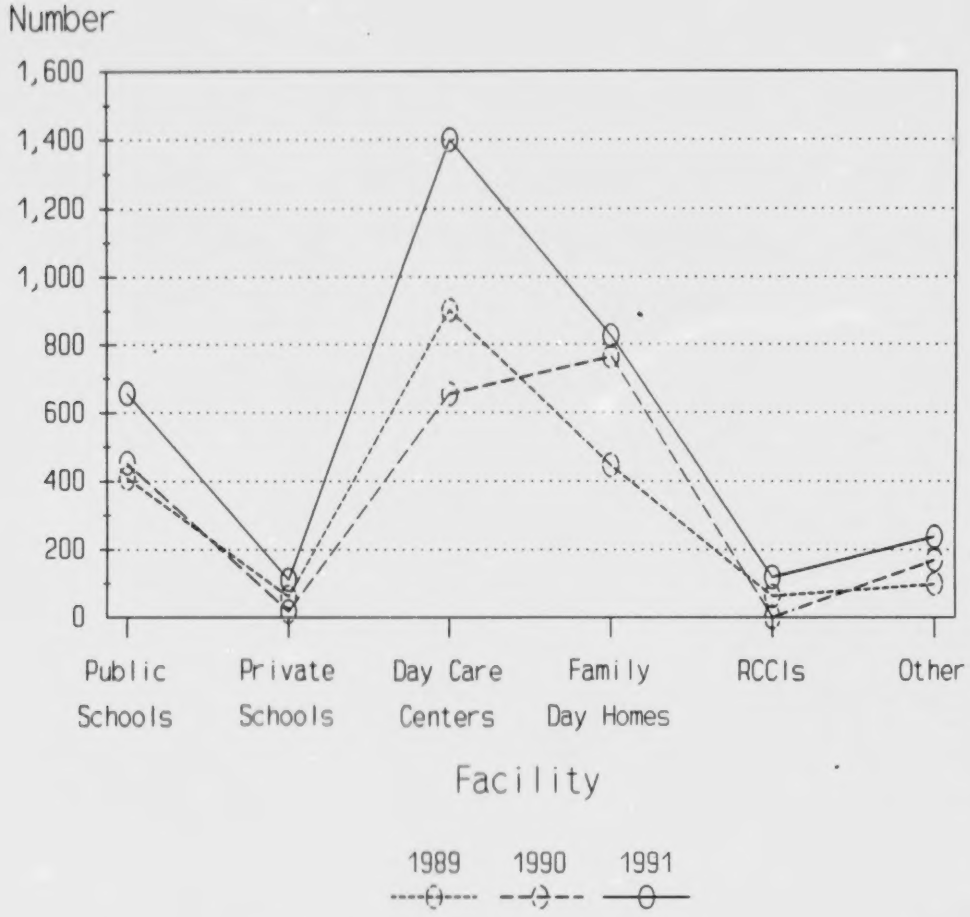

Figure 1. Facilities of Workshop Participants in the Past Three Years

Figure 1 indicates that the 1989 and 1990 general participation trend prevailed through 1991. Participants from day care centers and registered family homes were reached more than participants from public or private schools. There were 657 participants from public schools in 1991 compared to an anticipated goal of 693 participants. The actual number of public school participants fell only 5% short of the anticipated number. However, since the general workshop participation was almost double the anticipated participation, the increase was in the number of participants from other facilities. The fact that the increase in the number of public school participants was not commensurate with the increase in total participation may be due to the fact that one of the AAT workshops scheduled for 1990, Nutrition and Life Sciences, was scheduled about six months after the beginning of FFY 1991. Shortage in NET staff caused the delay in the development and scheduling of the workshop. In addition, shortage in teacher training funds may have discouraged public school teachers from participating.

Participants' Functions:

Figure 2 shows the different functions the participants performed in their work facilities.

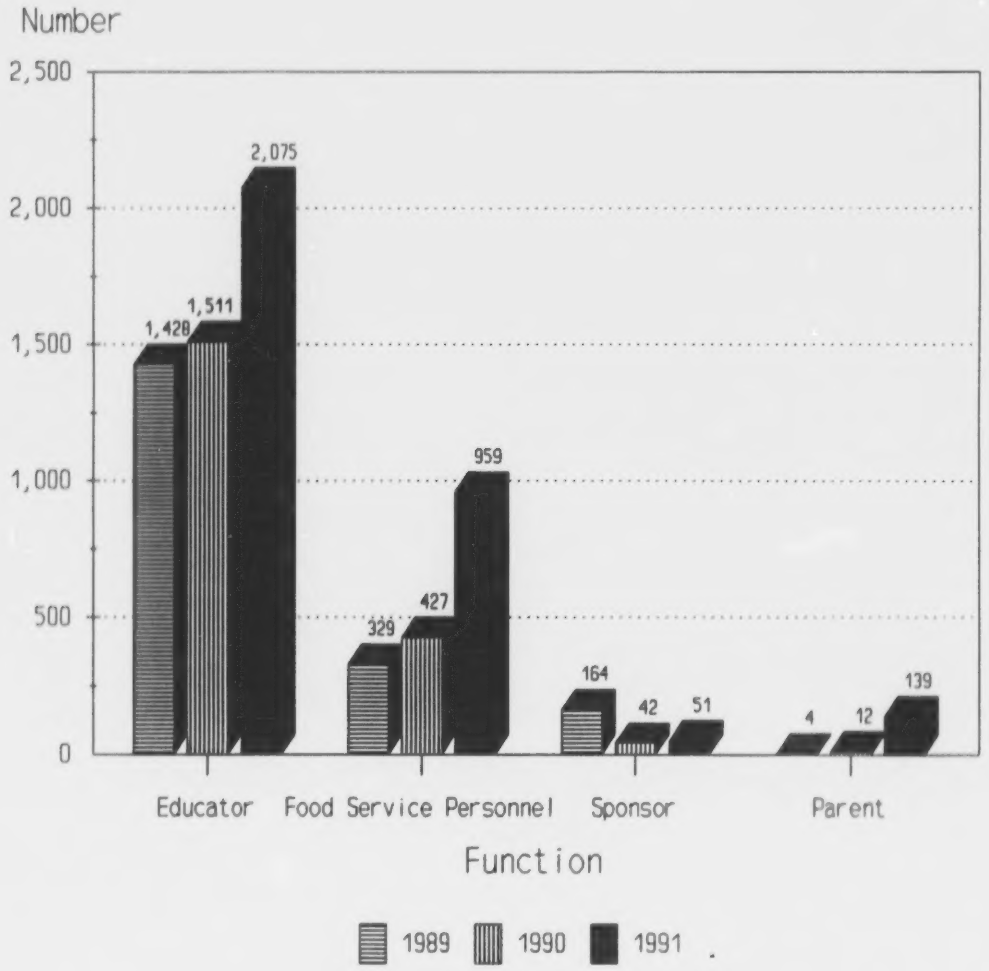

Figure 2. Function of Workshop Participants in the Past Three Years

It is apparent from Figure 2 that the number of participating educators in 1990 increased slightly over the number of educators in 1989. In 1991, the number of participating educators increased more than 37% over 1990. This data reflects the overall increase in workshop participation in 1991. However, the majority of the educators worked in child care facilities rather than public schools. The number of food service personnel, another priority target group, showed a 124.6% increase in 1991 over 1990.

Hours of Training:

Figure 3 illustrates the number of hours of training delivered to educators and food service personnel in schools and child care facilities in 1991.

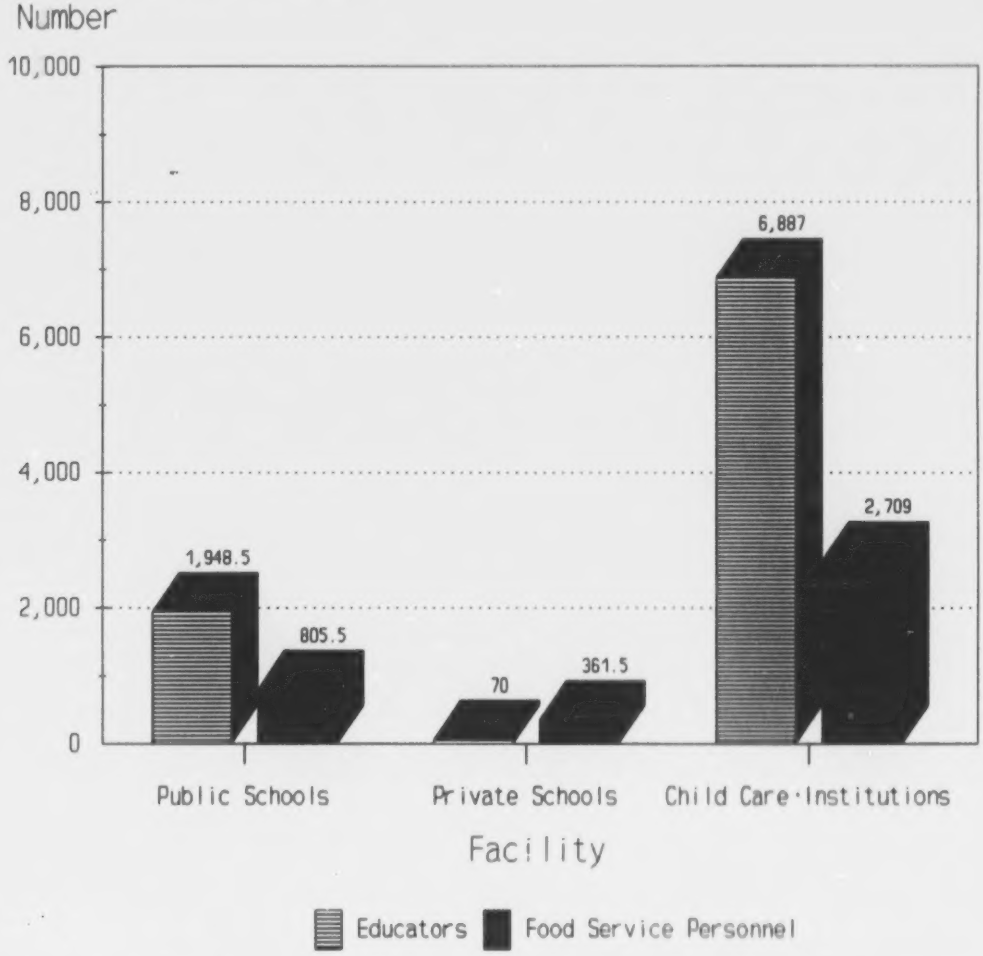

Figure 3. **Training Hours Delivered to Educators and Food Service Personnel in 1991**

Data in Figure 3 show that there is a difference in the number of training hours delivered to educators and to food service personnel. Educators received considerably more training hours than food service personnel. This is because the number of educators who participated in NET workshops far exceeded the number of food service personnel, a trend that prevailed during 1989 and 1990. The number of training hours delivered to child care educators was more than three and one-half times the hours delivered to public school educators.

The total hours of training delivered in 1991 (12,781.5) was over two and one-third times that of 1990 (5,393). This increase reflects the overall increase in the number of workshops conducted and the increase in workshop participation in 1991, over both 1989 and 1990.

Participation in Food Programs:

The NET program was designated to support the USDA reimbursement food programs. Information on the food programs in which the facilities of workshop participants participated indicate a possible positive effect of the NET program on these programs. Table 2 lists the number and percent of workshop participants who indicated participation in the different food programs.

Table 2

Workshop Participant Food Programs

Food Program	Number of Participants	Percent
CACFP	2,266	67.1
NSLP	227	6.7
SBP	22	0.7
SMP	7	0.2
SFSP	38	1.1
NSLP/SBP	446	13.2
More than 2 food programs	112	3.3
None	153	4.5
Missing Data	104	3.1
TOTAL	3,375	100.0

Table 2 indicates that the majority of workshop participants (67.1%) indicated that their facilities participated in the CACFP. This is because the majority of workshop participants worked in child care facilities. Only 4.5% of the workshop participants indicated that their facilities did not participate in any food program.

Children Reached Through Workshop Participants:

In 1990, 12,600 children were reached through public school educators, 260 children were reached through private school educators, and 1,140 children were reached through educators in child care facilities. Figure 4 shows the number of children reached through educators, food service personnel, and parents in 1991.

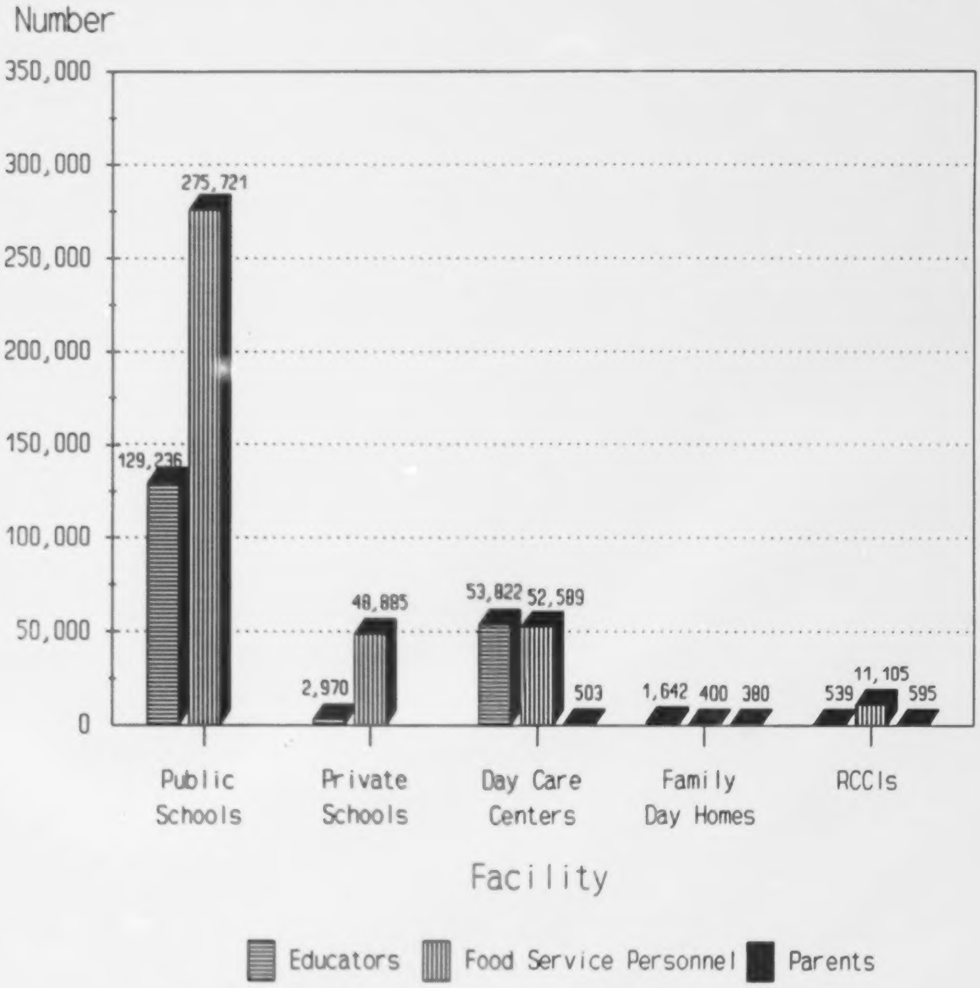

Figure 4. Number of Children Reached by Workshop Participants

In 1991, the number of children reached increased considerably over 1990. Comparisons between the number of children reached through the different groups participating in NET workshops indicate that in spite of the fact that the number of participants from child care facilities far exceeded those from public schools, the number of children reached through public school educators was about two and one-third times those reached through educators of all child care facilities combined. The same holds true with respect to the number of children reached through public school food service personnel. Food service personnel working in public schools reached about four and one-third times the number of children reached through those working in child care facilities combined. These results are due to the difference in the ratios of educators to children and food service personnel to children in schools and child care facilities. These data stress the importance of reaching public school target populations. However, the importance of reaching workers in child care facilities cannot be minimized, since these workers reach children at an earlier age, before food habits are set and are difficult to change.

NET LENDING LIBRARY

Introduction:

The NET lending library is one of the key elements in the Texas State Plan for promoting children's health and well-being through improved nutrition. Circulating over 3000 up-to-date printed and audiovisual materials on nutrition education, the library provides educators, food service personnel, parents, and others who are interested in child nutrition with ready access to materials to teach children about nutrition and to plan and prepare nutritious meals for the children.

In addition, use of the lending library by other state agencies and public programs has at least two more advantages: 1) it increases the NET program's outreach, and 2) it reduces the probability of duplicate development or acquisition of materials on nutrition education. Thus, improved coordination of the NET library services assures more efficient use of federal and state resources allocated to support child nutrition and health.

The NET collection is housed in the library facilities at the headquarters offices of the TDHS in Austin, Texas. Circulation is managed by a full-time NET program librarian. Requests to borrow items from the collection are made by mailing an order form or by calling the librarian. Materials are delivered and returned by post or parcel service for borrowers who are located outside

Austin, while those who are located in Austin are required to check-out and return materials in person. Borrowers are strongly urged to insure items at full value when returning them to the library so that the risk of loss in transit is minimized. However, other than the cost of return postage and insurance, use of the lending library is free of charge.

To encourage use of the collection, a catalog of printed materials and another catalog for audiovisual materials were compiled in 1984. Since the collection is in constant updating and growth, a new audiovisual catalog was compiled and produced in 1990. In 1991, 2,489 copies of the catalogs were distributed to schools and child care facilities compared to 490 catalogs distributed in 1990. The catalogs distributed in 1991 included 304 new acquisitions. The library's new acquisitions in 1991 were 606, almost twice the number of acquisitions in the previous year.

Method of Evaluating the Lending Library Participation:

Data on the library performance and circulation are accumulated using a library feedback form. The form consists of items that are intended to collect information on the borrower's function and work facility, how the borrowed item was used by the borrower, and the borrower's evaluation of the item. The form is revised periodically to improve the accuracy of the collected data. A copy of the form is included in Appendix A of this report.

The library feedback form is provided to borrowers with each circulated item. Borrowers are urged to fill-out the form and return it with the borrowed item. Since the library feedback forms are filled out and sent after using the borrowed items, only about 50% of the forms were returned with the borrowed items in the past years, which resulted in underestimating the circulation of the library collection. In addition, the circulation procedures that were followed were such that circulation forms were destroyed after the return of the borrowed item, which made it difficult to follow-up on unreturned feedback forms.

In 1991, a follow-up procedure was developed to remind the library borrowers to return the feedback forms. Item circulation is entered in a data base and is tracked to allow for the follow-up procedure. These procedures resulted in a 99.4% return of the feedback forms and, consequently, in collecting more accurate data on material circulation.

Due to the nature of library services and the way the borrowed library items were used in 1991 and the previous years, participants who attended presentations that were based on materials borrowed from the library were considered participants in the NET program.

According to NET policies and regulations, participation in the various NET units should be reported non-duplicated on the FNS-42 form. To avoid duplication between participation in NET workshops and the NET library, data on workshop participants and the library borrowers were entered on mainframe files and sorted by the social security numbers of the participants and the borrowers. This was done for the purpose of reporting program performance data to USDA. The LAG function of the SPSS-X statistical package was used to eliminate duplications between and within the files. However, in evaluating the activities of the two program units in this evaluation report, participation in these units is reported as it occurred, without eliminating duplication in cases between or within the separate units.

Lending Library Participation:

Material Circulation:

Figure 5 illustrates monthly circulation of the library collection during 1990 and 1991.

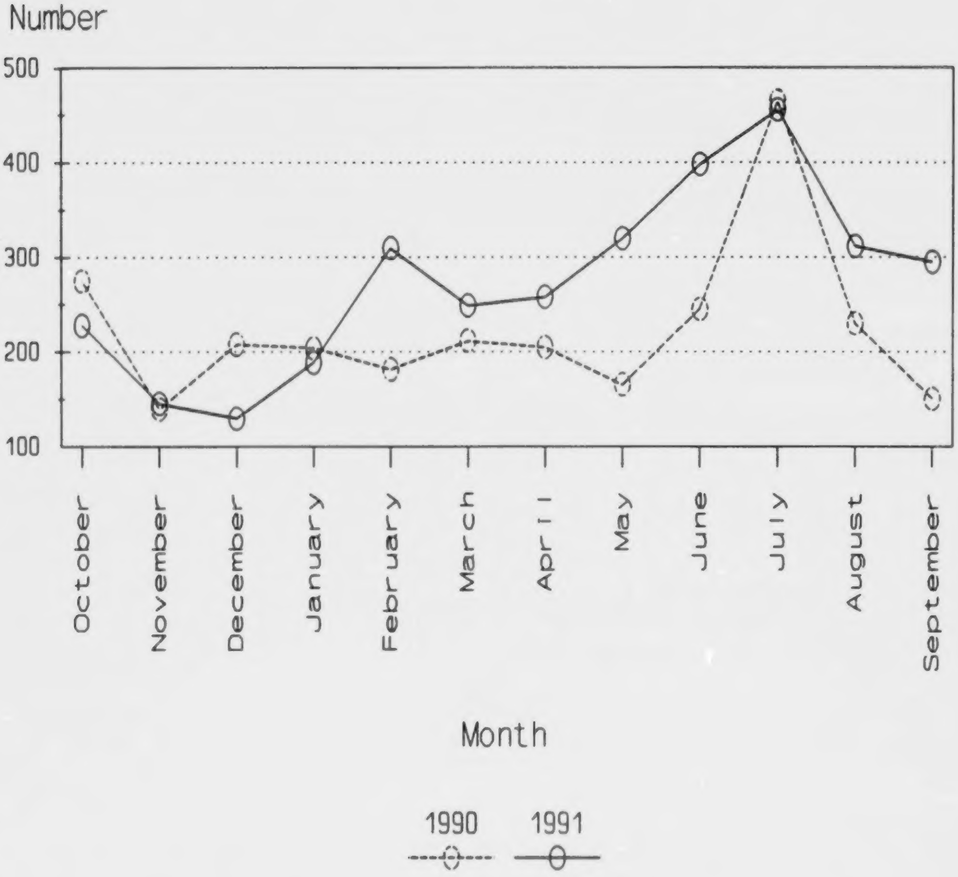

Figure 5. Monthly Circulation of Library Materials in FFY 1990 and 1991

Figure 5 shows that circulation of library materials during the first four months of FFY 1991 was slow relative to 1990. A steady increase in circulation occurred throughout the rest of the year. This increase in circulation may be a result of distributing the new audiovisual catalog mentioned previously. The catalog was developed in 1990, and was distributed to schools and child care facilities during the first quarter of FFY 1991. In addition, 606 new library acquisitions were added to the library collection. Consequently, the collection was more suited to the needs of prospective borrowers.

Figure 5 indicates also that a flux in circulation occurred in July and August, and coincided with a coordination of the library services with the TSFSA. The NET library served as a clearing house for training courses delivered to members of this association during this period.

Themes of Circulated Materials:

Table 3 lists themes of circulated library materials in 1991.

TABLE 3

Themes of Materials Circulated in FFY 1991

Theme	Frequency	Percent
Food Service Management/Training	1,097	51.4
General Nutrition	239	11.2
Preschool/Elementary Nutrition Education	202	9.5
Child Care Health and Nutrition	200	9.4
Child Health Education	162	7.6
Adult Health Education	119	5.6
Physical Fitness/Sports Nutrition	57	2.7
Children's Materials	41	1.9
General Cookery	17	0.8
TOTAL	2,134	100.0

It is apparent from Table 3 that the main theme of the circulated library materials in 1991 was food service management/training. The increase in the circulation of this theme reflects the effect of the coordination between the NET program and the TSFSA.

Following the food service management/training items were the general nutrition items (239), followed by preschool/ elementary nutrition education (202) and child care health and nutrition (200). More specialized themes such as general cookery, children's books, and physical fitness/sports were the least borrowed materials. This trend indicates that most of the borrowed materials were used to educate and train adults in group settings, and thus expand the effect of the library collection to more adults and to the children these adults reach.

Types of Circulated Materials:

Table 4 lists types of circulated materials in the order of their circulation in 1991.

TABLE 4

Type of Library Materials Circulated in FFY 1991

Type of Material	Frequency of Circulation	Percent
Videotape	1,685	79.0
Film	187	8.8
Book	109	5.1
Filmstrip	71	3.3
Curriculum Guide	26	1.2
Slides	23	1.1
Teaching Aid	16	0.7
Fact Sheet/Pamphlet	7	0.3
Audiotape	4	0.2
Resource Guide	3	0.1
Periodical	3	0.1
TOTAL	2,134	100.0

Table 4 indicates that audiovisual materials topped the list of circulated materials in 1991. This same trend was dominant in previous years. Using the NET library as a clearinghouse for relatively expensive and rare audiovisual materials rather than printed materials, emphasizes the important role the NET library plays in this field. It also points to the possibility of using the library collection as a source of support materials for workshops and group presentations more than as a source for research and other individual usage.

Use of Circulated Materials:

Figure 6 shows how the borrowed library items were used in 1991.

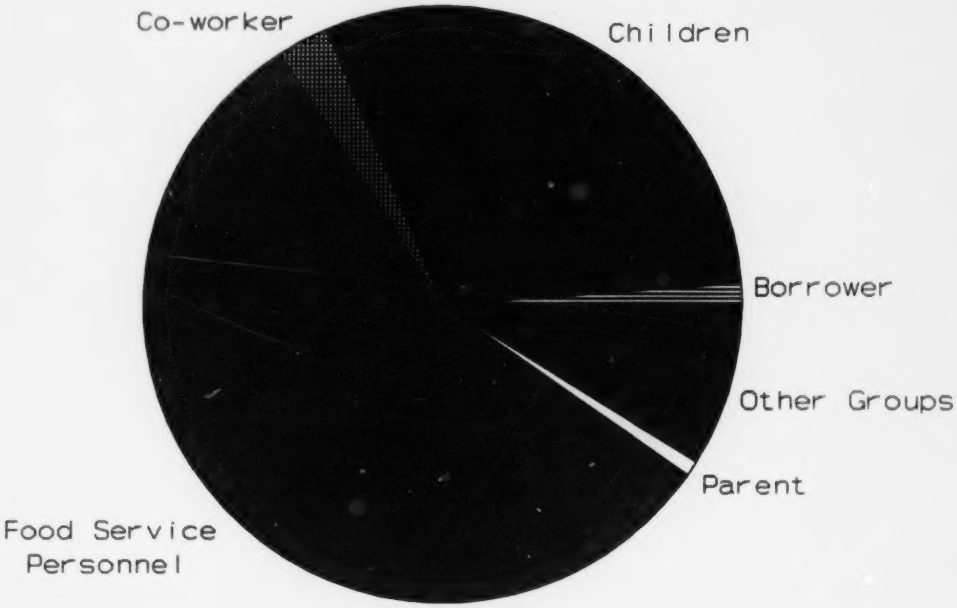

Figure 6. Use of Circulated Library Materials

The information in Figure 6 supports the assumption that NET library resources were used in group educational and training settings more than as a resource for individual information. Over 56.2% of those who viewed the materials were food service personnel, compared to about 30.3% children. Using borrowed library materials in group settings considerably increases NET outreach and the efficiency of NET library services.

Other significantly large groups who benefitted from the NET library collection were residents of the Texas Department of Mental Health and Mental Retardation state schools (1,395 items), clients of the Women, Infants and Children program (1,300 items), day home providers (1,017), senior citizens (589), extension services agents and staff (533), patients (489), college students (445), and day care or pre-school teachers (308). This wide variety of patrons from state and community agencies dramatizes the impact of the NET library and its role in promoting nutrition and health in Texas.

Functions of Library Borrowers:

Figure 7 lists the main functions of the library borrowers.

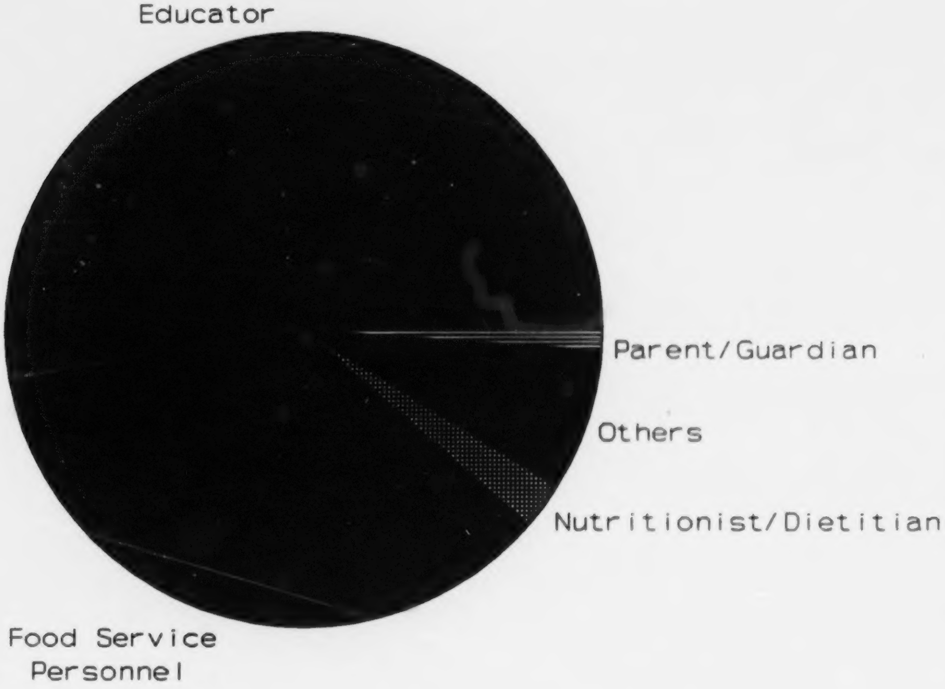

Figure 7. Function of Library Borrowers in 1991

Figure 7 shows that educators topped the list of borrowers of materials from the NET library, comprising 53.8% of the borrowers. Educators were followed by food service personnel (37.1%). Other library users were sponsors and administrators who supervised educators and food service personnel. Thus, it is plausible to assume that the library collection was used in its intended purpose; namely, to educate children and adults who influence children's eating habits, and educate them in nutrition and health.

Work Facilities of Library Borrowers:

Information on the work facilities of library borrowers may be used in planning library outreach. This information points to the facilities that have already been reached and need continuous follow-up and updates on other possible usage of library services, and the facilities that were not reached and are not aware of library services that may be important to their function. Figure 8 illustrates the work facilities of the library borrower in 1991.

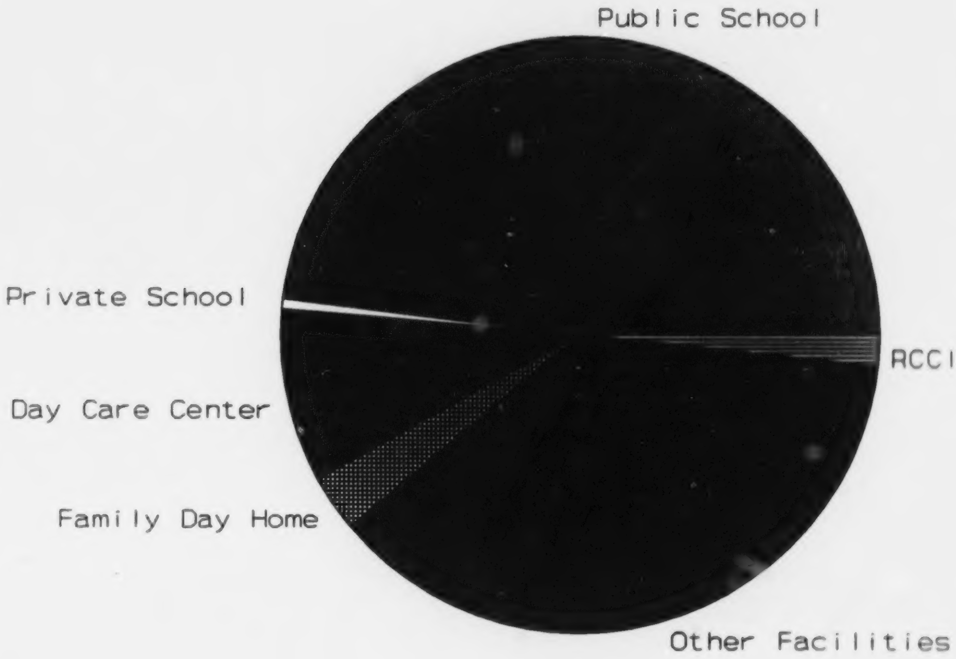

Figure 8. Facilities of Library Borrowers in FFY 1991

Figure 8 shows that almost half (48.1%) of library borrowers worked in public schools. Only 14% of the borrowed materials were used in child care facilities. The rest of the circulated materials were used in varied public and private agencies such as community centers, goodwill industries, and parent-child institutions. Fifteen colleges and universities and 13 hospitals also benefitted from the library collection. It is apparent from the work facilities of the library borrowers that the library materials were circulated to NET target populations, and that these facilities require continuous follow-up and updates on the services of the library.

Figure 8 indicates, also, that there is a need to increase the outreach efforts directed to day care centers and family day homes. Promoting nutrition and health in these facilities that care for children at an early age is crucial to the realization of NET's goal.

The 1991 goal for library participation was set at 4,875; 1,950 for public school populations, and 2,925 for other populations. The number of children reached by educators and food service personnel in public schools was 13,440, about seven times the goal set for public school populations. The number of children reached in child care facilities was 4,783, which was more than one and one-half times the anticipated goal. Thus, the library outreach far exceeded the goals set for 1991 for both schools and child care facilities, even though it was not proportional for these two types of organizations.

Evaluation of Borrowed Library Materials:

The library feedback form included three items that asked the library borrowers to rate the content of the materials they borrowed, the way the content was presented, and how useful the materials were to those who saw it. Figure 9 shows these ratings.

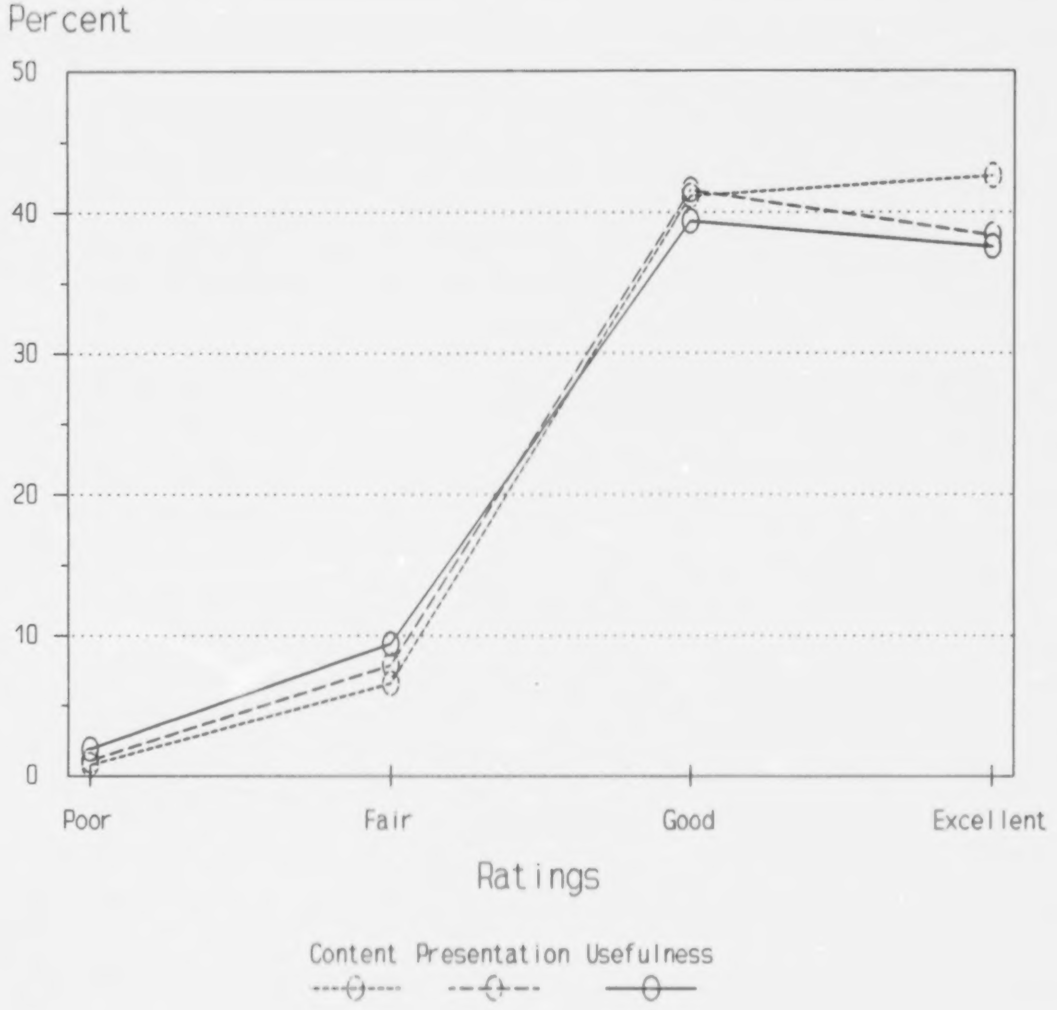

Figure 9. Borrower Evaluation of Library Materials in 1991

Figure 9 illustrates that between 42.6% and 37.6% (over one-third) of the circulated library collection was rated as excellent in content, presentation, and usefulness. Less than 2.0% of the circulated materials were rated as poor. The reason for this relatively high rating may be due to the process followed in evaluating library acquisitions. Contract dietitians review each item and evaluate it before adding it to the collection, using an evaluation form that consists of both open ended and scaled items. Appendix A of this report contains a copy of the NET Lending

Library Collection Material Evaluation Form. In addition, the entire collection is evaluated periodically, and outdated items are purged. Thus, the quality of the borrowed items should encourage the library borrowers to continue using the library, and the themes of the library collection seem to suit children and other target populations in schools and child care facilities.

Sources of Information About the NET Library:

Figure 10 shows how library borrowers knew about the NET library and its services in 1991.

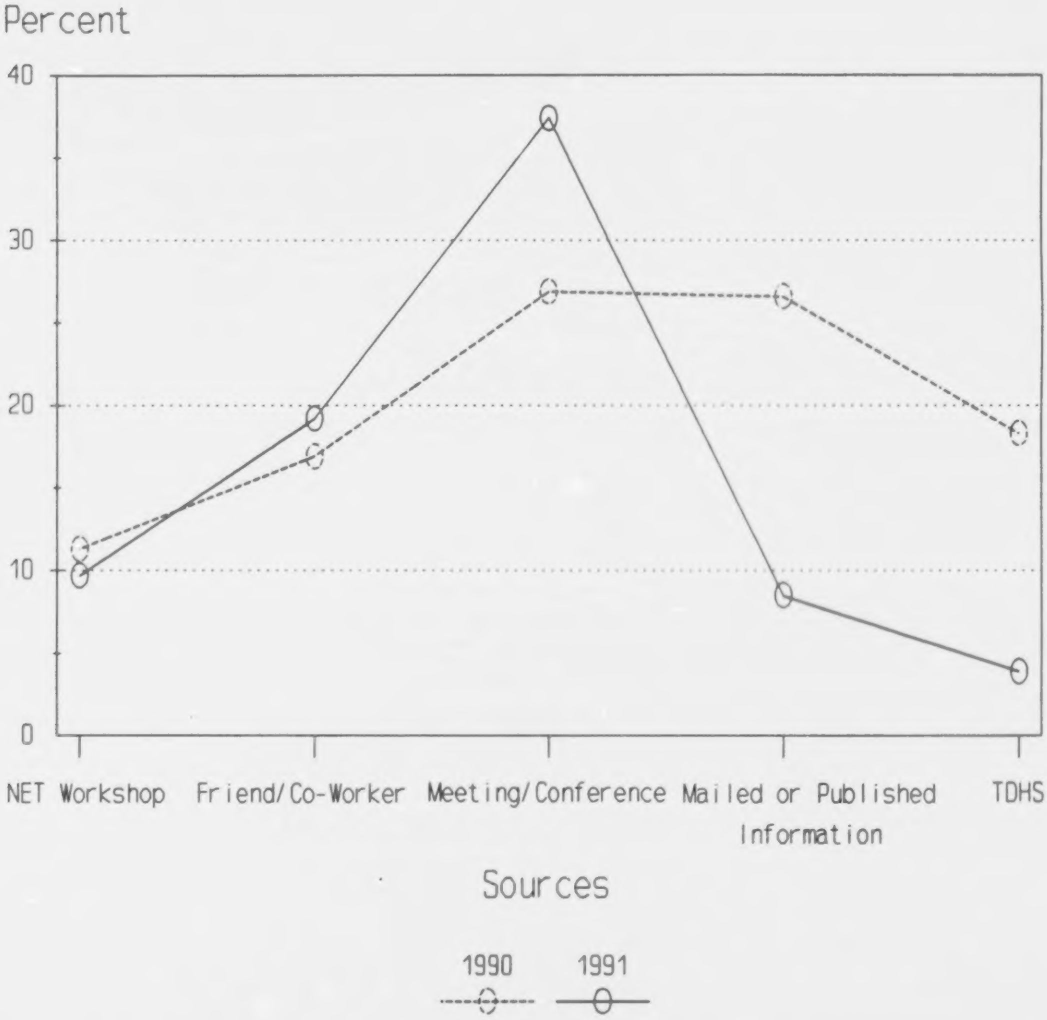

Figure 10. Sources of Information About the NET Library in FFY 1990 and 1991

It is apparent from Figure 10 that professional meetings were the most frequent source of information about services of the NET library, followed by mailed or published information about the library, followed by information the borrowers received directly from NET. To continue to enhance library outreach to target groups in schools and child care facilities, NET should continue to publicize its library services in professional meetings, mail the information especially to child care facilities, and continue to write articles and announcements in periodicals and newspapers. Presentations on the library services and reviews of new or basic library items that are available for specific groups or organizations, especially to day care centers and family day homes, may also be considered as avenues to extend the library services to these groups.

DEVELOPMENT AND DISTRIBUTION OF INSTRUCTIONAL MATERIALS

Introduction:

As a relatively small program, NET relies heavily on ready-made instructional materials in nutrition education and food service management. However, NET's efforts in education and training are not limited to information dissemination. Thus, curricula for the 23 NET workshops conducted by NET were developed and revised regularly to meet the recent advances in knowledge as well as in methods and techniques of instruction, and to increase content congruence with federal and state policies and regulations.

In addition to workshop curricula, regular evaluations of NET activities may point to a need to develop certain instructional materials such as recipes, cycle menus, brochures, and handouts. Several materials, such as instructional kits and food recipes, were translated into Spanish to meet the needs of the large Hispanic population in Texas. Coordination with other nutrition and public health programs may also result in identifying a need to develop instructional materials.

When ready-made instructional materials are not available to realize NET's goals and objectives, the NET staff develops needed instructional materials or revises and adapts available materials. Sometimes, NET's contract dietitians participate in material development. When development efforts require skills, equipment, and/or time that is beyond what is available to the NET staff, NET contract other public or private institutions for development of the desired material.

Material Development:

Workshops:

Two workshops were revised in FFY 1991, they are:

1. Nutrition and Life Sciences
2. Nutrition and the Preschool Child

The Nutrition and Life Sciences workshop was developed for home economic and life science teachers of secondary grades 8-12, and was approved for six hours of advanced academic training (AAT) by TEA. The purpose of the workshop is to inspire these teachers to coordinate their efforts in showing their students how lab experiments relate to scientific knowledge. The workshop was completed by the end of FFY 1990 and was scheduled and delivered in the second half of FFY 1991.

The Nutrition and the Preschool Child workshop was developed to assist educators of preschool children to use the Dietary Guidelines for Americans as a basis for nutrition education in the classroom. The workshop identifies nutrition influences, and uses nutrition labels and other classroom resources to teach appropriate food selection skills and to encourage good food and snack choices based on nutrition needs. The workshop duration is six hours.

Public Service Announcements:

Coordination with TEA identified the School Breakfast Program and breakfast in general as a priority area in need of development and promotion in Texas. The NET program agreed to participate in efforts to develop and distribute materials to promote breakfast to children of all ages.

NET, with the help of the TDHS media services, contracted with a private business firm to produce two public service announcements (PSA's). The first PSA was a video cartoon that was designed to target children in grades 1-6. This PSA was named "Early Bird" after the cartoon character in the PSA. The second PSA was designed to target teenage children and was named "Breakfast Party" after the breakfast party that was illustrated in the PSA. Each PSA lasted for a maximum of 30 seconds but shorter versions of the PSA's were produced as well.

A poster that illustrated the Early Bird cartoon character was also developed as part of the breakfast promotion package. The poster was designed for use in elementary school cafeterias and in other child care facilities. In addition, a menu-back was designed to be placed on the back of the monthly breakfast and lunch menus distributed to elementary school children and their parents.

Instructional Materials:

Coordination with the Texas Department of Agriculture (TDA) resulted in NET awarding TDA a grant to fund Project TEACH. Project TEACH is a statewide project to encourage Texas food service personnel to plan school meals using Texas fresh produce when available.

A program guide was developed to help plan activities and lead discussions that will stimulate children in kindergarten through grade three to learn about Texas agricultural products and good eating habits. Other materials developed to support the guide are:

1. Texas Produce Map--a full-color graphic that features the nine major agricultural areas in Texas, and shows when the state's top fruits, vegetables, and nuts are harvested.

2. Food Choices for Healthy Eating Guide Poster--a pictorial grouping of food for good nutrition. The guide illustrates the food groups from which to choose a number of servings each day. The guide also outlines suggested measurement of each serving for children kindergarten through third grade.

3. Menus and Recipes--one day sample menus for food service personnel to include in their monthly menus. These menus include fresh and processed fruits and vegetables grown in Texas, and nutritious recipes that will add diversity to the menu.

4. Fact Sheets on Texas Agriculture--six fact sheets that include information about Texas agriculture, that would appeal to elementary school children. The sheets were designed to be posted as a "good thought" in the cafeteria. Each "good thought" would coincide with an item on the menu.

5. Activity Sheets--two sheets were developed: "Where do fruit and vegetable come from?" was designed to help children understand where food comes from and how it gets to their table. Children may color the pictures as they follow fruits and vegetables from the farm to their table. Other activities include "Connect the Dots" and "Find the Vegetable Words."

Revision of the two workshops and development of the materials mentioned above meets the goal set for material development during FFY 1991. Use of these materials will benefit a number of children and exceeds the numbers specified in the state plan.

Material Distribution:

Workshop Material:

Each workshop participant received a material package that included the workshop curriculum guide and the handouts that were used during the workshop. Thus, 3,375 material packages were distributed to the workshop participants in 1991.

In addition to the materials distributed to workshop participants, selected materials were mailed to the work facilities of the participants to enable the participants to use materials needed to apply the knowledge and skills they gained from the workshops in actual life and classroom settings.

Table 5 lists materials mailed to the work facilities of workshop participants during FFY 1990.

Table 5

Materials Mailed to Facilities of Workshop Participants in 1991

Material	Number Distributed
Dietary Guidelines for Americans	1,063
Fiber Poster	180
CN Labeling Basic	150
Food Buying Guide	482
Produce Posters	75
How To Eat For Good Health Poster	1,316
Commodity Recipes & Fact Sheets	257
Dietary Guidelines for Infants	549
Dietary Guidelines Posters	300
Shopping For Food & Making Meals In Minutes	300
Making Bag Lunches	300
Preparing Foods & Planning Menus	300
Day Care Nutrition In A Nutshell	463
Chef Combo Kit (E)	210
Chef Combo Kit(S)	105
Guide To Good Eating	1,766
Recommended Dietary Allowances Sheets	289
Ethnic Recipes	395
Cycle Menus	395
Sports Sense	140
Food Power	140
Athletes Kitchen	140
Economy in the Kitchen	222
Snacks for Children	149
Florida Parent Letters	286
Florida Curriculum	286
Florida Teacher Guide	286
Very Hungry Caterpillar	175
Food Models	175
More Than Graham Crackers	118
Super Kids Poster	118
TOTAL	11,130

Over 80.9% of the materials listed in Table 5 were instructional materials designed to directly instruct children in nutrition education. In addition, recipe cards, menus, and food regulations were distributed to help food service personnel plan nutritious meals. Both types of materials are important in realizing NET's goals.

The materials distributed to workshop participants (3,375), in addition to the material distributed to schools and child care facilities, totaled 14,505 materials that were distributed in 1991. This number reflects a 23.2% increase over 1990. This increase is due to the considerable increase in the number of workshops conducted in 1991.

Promotional Materials:

The Early Bird PSA was copied and distributed to 85 affiliated network television broadcasting stations. Five copies of the PSA were distributed to Public (community) Service Broadcasting channels. In addition, 18 VHS copies of the PSA were given to NET contract dietitians, 25 copies to public schools upon request, and 3 copies to TSFSA. The TSFSA will use the PSA to promote breakfast during "Texas School Breakfast and Lunch Week," in March 1992.

In addition to in-state distribution of the PSA, copies were given to the Southwest Region NET Coordinator to be duplicated and distributed in other states in the region. A copy was sent to representative Ron Wyden of Oregon State. The representative is promoting legislation to limit "junk food" advertisement aimed at children. A copy was also sent to Agnus Molnar, in the Community Food and Resource Center of New York State.

Fifteen-hundred copies of the Early Bird poster were distributed to public elementary schools and child care facilities throughout Texas. Four thousand copies of the menu-back were distributed to public elementary schools in Texas.

NET developed three brochures in 1990, to promote NET, the library collection, and the workshops. Approximately 1,500 of each of these brochures were distributed in 1991 to NET contract dietitians. NET also distributed these brochures in the meetings and exhibits cited below.

The total number of promotional materials distributed by NET in 1991 was 10,140. This, in addition to the number of workshop materials distributed in the same year, brings the total number of distributed materials to 24,645.

PRESENTATIONS, EXHIBITS, AND PUBLICATIONS

Introduction:

A major task of NET is to publicize the services it provides for the different target populations in order to increase NET outreach and to manage program services efficiently. It is good public relations to inform the public about how their share of federal taxes is spent in educating the nations's children in eating economically and for good health. Presentations, exhibits, and publications are important sources of information in a modern society.

Presentations:

Table 6 lists titles of presentations that were given in 1991, their locations, dates, and the groups that attended these presentations.

Table 6

NET Presentations During FFY 1991

Presentation	Duration	Location	Date	Audience
Basics of CCFP Meal Pattern	1 hr, 20 min	National Association for the Education of Young Children, Wolfforth	April, 1991	Day Care Educators
Chocolate Milk: A Choice for Good Nutrition	1 hr, 20 min	Texas School Food Service Association Spring Workshop, District 22, Houston	April 27, 1991	Food Service Personnel
The Four Food Groups/Nutrition & Health	Four, 1 hr presentations	Youth Opportunities Unlimited (Y.O.U.), The University of Texas at Austin	June 20-21, 1991	High School Students
Nutrition Activities for Children	1 hr, 30 min	Head Start Association Pre-Service Training Conference, Austin	August 2, 1991	Educators
Nutrition in a Nutshell	Two, 1 hr, 20 min presentations	Third Annual Technical Assistance Conference of Texas Professional Home Child Care Association, Houston	September 14, 1991	Family Day Home Providers

Data in Table 6 indicate that a total of nine presentations were given to different target groups. However, the same presentation was given more than once in some instances. A total of 209 individuals attended these presentations. A total of 29,394 children were reached as a result of these presentations. None of the presentations were directed to parents.

Exhibits:

Table 7 includes a list of exhibits and fairs that NET held during FFY 1991.

Table 7

NET Exhibits and Fairs During FFY 1991

Place of Exhibit	Date
Southwest Texas State University, San Marcos	June 4, 1991
Region XIII Comprehensive Health Institute, Pflugerville	June 19, 1991
Texas School Food Service Association Hall of Fame, Sinton	June 19-20, 1991
Parent Teacher Association, San Antonio	November 16-18, 1991

Table 7 indicates that NET participated in 4 exhibits and fairs, compared to 10 that were conducted in 1990. Two of the exhibits were held in statewide meetings, and two were held at state agencies that perform functions similar to the NET program. The Texas State Plan set the goal for the number of fairs held by NET in 1991 at five. Thus, NET fell one exhibit short of the set goal. NET needs to participate in more exhibits and fairs at the national, state, and local levels.

Publications:

Table 8 includes a list of NET's publications and news releases during FFY 1991.

Table 8

NET Publications and News Releases During 1991

Article/Announcement	Periodical	Date
DHS Campaign Touts Benefits of Breakfast	Austin American-Statesman	July 6, 1991
DHS: Breakfast Important to Health	Killeen Daily Herald	July 6, 1991
DHS Launches Early Bird Public Service Campaign to Promote Better Breakfasts for Texas Children	Texas Department of Human Services News Release	July 3, 1991
The NET Lending Library	Lunch Bell, Journal of Texas School Food Service Association	Summer, 1991
Available Funding for Nutrition Education Mini-Grants	Lunch Bell, Journal of Texas Food Service Association	Summer, 1991
Texas Department of Human Services Nutrition Program Makes Materials, Training Available	ECI Update, Journal of Texas Early Childhood Intervention Program	Winter, 1990
Chocolate Milk Scores High in School Lunch	Lunch Bell, Journal of Texas School Food Service Association	Winter, 1990

Thus, Table 8 lists eight articles and news releases that were published during 1991. Only one of these publications was a technical article and the rest were news releases on program activities and services.

In addition to the above mentioned published news releases, a televised interview was conducted with the NET Coordinator and the Food Service Director of Austin Independent School District to discuss the importance of breakfast for children. The interview was televised by Channel 36, a local television station, in August, 1991.

COORDINATION WITH RELATED PUBLICLY SUPPORTED PROGRAMS

Introduction:

Coordinating efforts of the NET program with those of other publicly supported programs with similar functions is based on NET program regulations and is a program goal. This coordination is expected to promote outreach of the NET program and to reduce duplication of efforts and resources of publicly supported programs.

Coordination efforts take different forms. NET continues to attend and present program outcomes at state and national professional meetings. This interaction allows communication and exchange of information relating to NET's planned activities and possible avenues of cooperation with other programs. Another direct approach to coordination is submitting proposals for cooperative efforts and offering consultations that are in the realm of NET's expertise. Exhibits, fairs and publications publicize NET's activities and expertise and open doors for cooperation and coordination.

Coordination Efforts:

The Texas Nutrition Resource Council was established as a major statewide cooperative linkage between food and nutrition policy stakeholders as a result of NET's efforts in June 1990. It meets quarterly to discuss funding possibilities, overlapping interests, legislation, and prevention of duplication of efforts.

In 1990, coordination with TEA resulted in NET's review of the Texas Essential Elements of the high school Health Education curricula which dealt specifically with the nutrition component for grades 9-12. In 1991, the NET Coordinator represented NET on a writing committee to develop a comprehensive curriculum for grades K-12.

Another aspect of the coordination between NET and TEA is participation in a breakfast promotion campaign. As mentioned previously, NET developed two PSA's, a poster, and a menu-back, to be used with elementary school children and teenagers.

Coordination with TDA resulted in NET awarding a grant to TDA to develop materials that promote Texas agricultural products to children in grades K-3. The grant funded production of educational mateials to support Project TEACH (Texas Education and Agriculture Cooperating for Health).

A TSFSA initiative was established early in 1990 with the NET library collection designated as a major clearinghouse for all certification courses delivered to members of this association. This coordination was renewed in 1991, and NET agreed to purchase audiovisual materials to support the certification training statewide.

In addition, NET staff were invited by the American Cancer Society's Public Education Committee to help plan nutrition education activities statewide for preschool through high school age children. The NET Project Coordinator was a member of the Texas Cancer Council Task Force curriculum development project "Planning the Seed to Good Health."

NET expertise was sought also by the Texas affiliate of the American Heart Association School site subcommittee. The subcommittee was tasked to review and make recommendations regarding the "Getting to Know Your Heart" curriculum designed for elementary school students in grades 1-3.

Furthermore, NET was represented on the Dietary Guidelines Coalition. The coalition is formed of representatives from various agencies who are involved in activities that help implement the Dietary Guidelines for Americans in schools throughout Texas.

SUMMARY

Table 9 summarizes the various target groups participation in the NET program as a result of NET's outreach efforts in 1991, and compares it with NET's participation in the past six years. It may be noted that improvements in procedures of data collection and analyses provided more accurate data during the past two years. The data in Table 9 represents the non-duplicated figures reported on form FNS-42.

Table 9

Participation in NET From FFY 1985-1991

Target Group	1985	1986	1987	1988	1989	1990	1991
Children	2,518	7,020	6,800	5,580	16,315	23,877	618,638
Educators	1,765	1,880	1,910	1,117	3,440	693	2,417
Food Service Personnel	935	780	1,870	2,550	3,417	478	1,155
Parents or Guardians	175	40	40	30	171	14	145
Others	820	408	310	1,040	------	698	221
Total	6,213	10,128	10,930	10,317	23,343	25,760	622,576

RECOMMENDATIONS

1. Since some workshops were conducted less frequently, and with fewer number of participants than the minimum required, there is a need to reconsider the procedures used in scheduling the workshops and analyze the workshops in general. It is not efficient to spend NET resources on revising, scheduling, and conducting workshops that are not in high demand. The need for specific workshops should be part of a comprehensive needs assessment, to reveal the variables that make NET workshops more appealing to target populations.

2. Only one workshop (Dietary Guidelines for Americans) was scheduled statewide during FFY 1991. The rest of the workshops were scheduled by the NET contract dietitians. A two-year plan for workshop scheduling should be prepared and adjusted yearly, and workshops should be advertised statewide.

3. Because the goal set for the number of public school participants attending NET workshops was not met in 1991, NET should renew its efforts in approving, developing, and conducting AAT workshops. These efforts must be based on a comprehensive review of public school nutrition curricula from K-12 and on state-of-the-art methods of teaching nutrition. Efforts should also be coordinated with TEA to facilitate teachers' participation in these workshops.

4. Since an increase in library circulation occurred as a result of coordination with TSFSA, and since similar increases occurred as a result of coordination between NET and other public agencies in 1990, there is a need for continued contact and coordination with professional associations and other agencies that are interested in training their members.

5. Most of the items borrowed from the NET library were audiovisuals and were used for group presentations. Thus, emphasis should continue on maintaining this type of material in the library collection. Audiovisual materials have already been emphasized by the production of the audiovisual catalog in 1990. Reviews and presentations of new audiovisual material acquisitions in schools and professional meetings, as well as professional journals, are recommended to increase library outreach, and NET's outreach in general.

6. Increase in library circulation to day care centers and family day homes was not proportional to increase in circulation to public and private schools. Day care centers and family day homes affect children's eating habits when the children are at a more impressionable age. Thus, there is a need to enhance the library outreach efforts directed to these facilities.

7. Since very few parents were reached through NET's interventions in FFY 1991 and in previous years, it is recommended that NET develop and deliver presentations and hold fairs at the annual PTA meetings and in the association's school meetings throughout Texas. Such efforts should boost NET's outreach to this target population that has a major influence on children's health and eating habits.

8. There is a need to renew NET's interest in professional writing and publishing in professional periodicals to stress NET's role as an authority on child nutrition.

9. NET actively pursued coordination efforts with other publicly supported programs in 1990 and 1991. This coordination is expected to increase participation in the NET program in 1991 and the following years. It is recommended that coordination efforts continue and extend to other public, community, and local agencies throughout Texas.

III. EVALUATION OF THE EFFECT OF COORDINATION WITH TSFSA ON LIBRARY CIRCULATION

INTRODUCTION

Background:

As mentioned in Section II of this report, use of the lending library by other state agencies and public programs increases NET outreach and participation, and reduces the probability of duplicate development or acquisition of materials on nutrition education. Thus, improved coordination of the NET library services assures more efficient use of federal and state resources allocated to support child nutrition and health.

Early in 1990, NET and the TSFSA agreed to use the NET library as a major clearinghouse for all training certification courses delivered statewide to members of the TSFSA during the months of July and August. The NET library, in return, received a stipend to purchase new videotapes and add them to its collection. This coordination of efforts resulted in an increase in NET library circulation of food management/training materials in FFY 1990.

As a result of the successful coordination between NET and TSFSA in 1990, a similar agreement occurred between these two agencies in FFY 1991. The NET library provided TSFSA with a list of materials on food management/training and helped clarify the content and use of these materials by providing appropriate annotations. The TSFSA reviewed these materials and identified the items that would be useful in their summer certification training. The TSFSA also provided the NET library with a list of additional material to be purchased with library funds, to support the TSFSA training.

Purpose:

NET directs substantial efforts and resources to coordination with national, regional, state, and community organizations. It became necessary to start evaluating the effect of these efforts on achieving NET's goals and objectives. It is possible at this time to only assess part of the immediate results of these efforts. The complete and long range results may not be seen until later. Evaluation of the coordination between NET and TSFSA in the use of the NET library services answers the following two questions:

1. To what extent did this coordination increase library circulation in FFY 1991?

2. What materials were identified, as a result of this coordination, as effective in food service personnel certification training?

METHOD

Sample:

The sample of library materials used in this evaluation consisted of 76 library items that were used in food service personnel certification training. Twenty-two new titles and a total of 188 videotapes were purchased on the recommendation of TSFSA.

Procedures:

All library items were circulated by the NET librarian, upon request, following the general procedures of library circulation. The library feedback form used to evaluate circulated library items was attached to each of the items used in food service personnel certification training and were filled in by the trainers or the coordinators who borrowed the items. These feedback forms, when returned to the NET librarian, were attached to the item request forms and were identified as TSFSA materials. Information on the forms were entered on the TDHS mainframe computer, in the same data file that contained data on the rest of circulated library materials. However, special codes were given to identify each of these items, and to analyze them separately and as part of the total library circulation.

Statistical Analyses:

The SPSS-X statistical package was used to analyze the data. The total number and the percentage of individuals who selected each item on the returned library feedback forms (519) were calculated.

RESULTS AND DISCUSSION

Extent of Increase in Library Circulation:

As mentioned in Section II of this report, the total number of feedback forms returned by users of the NET lending library in FFY 1991 was 2,134. About half (1,097) of these forms evaluated food service management/training items.

As a result of the coordination between NET and TSFSA, 519 library items were used in 1991. Thus, about one-quarter (24.3%) of the library circulation was a result of this coordination, which represents about one-half (47.3%) of the circulation of the food service management/training items.

About two-thirds (65.9%) of the library items were borrowed by food service personnel, and about one-third (32.6%) by educators of food service personnel. The majority of the borrowers (90.9%) worked in public schools, and only one worked in a private school. Other work facilities included TSFSA, community colleges, hospitals, and bakeries.

TSFSA library borrowers used the library material with NET's target populations. When asked about the function and number of those who benefitted from the borrowed items, their answer was a total of 225 co-workers and 48,913 food service personnel.

Theme and Type of Material:

The theme of the 76 items circulated for food service personnel certification training was, as expected, food service management/training. Only two filmstrips and two sets of slides were used; the remaining items were videotapes. None of the material circulated were printed items. Training curricula were developed by TSFSA and distributed to the trainees. And since the main purpose of food service personnel training was skill development, videotapes were the most appropriate media to achieve this purpose, other than actually practicing the skills in simulated or real-life situations.

Table 10 includes a list of the materials circulated, and the number and percent of borrowers.

Table 10

Material Circulated and Number and Percent of Users

MATERIAL	FREQUENCY	PERCENT
1. Unit 1 - Yeast Bread Science/Ingredients	14	2.7
2. Unit 2 - Yeast Bread Science/Processes	16	3.1
3. Unit 3 - Dinner Rolls	9	1.7
4. Unit 7 - Baking Powder Biscuits	15	2.9
5. Unit 8 - Muffins	12	2.3
6. Unit 4 - Pastry/Fruit Pies & Fruit Desserts	10	1.9
7. Unit 5 - Butter Cakes I	12	2.3
8. Unit 7 - Cookies	11	2.1
9. Now You're Talking	22	4.2
10. Meal Pattern Requirements & Offer vs. Serve	11	2.1
11. Operating & Cleaning the Mixer/Slicer/Vertical Cutter and Chopper	2	0.4
12. Operating & Cleaning the Deep Fat Fryer	2	0.2
13. Operating & Cleaning the Conventional & Convection Ovens	2	0.4
14. Operating & Cleaning the Range, Broiler & Grill	1	0.2
15. Food Service: Skills & Equipment	1	0.2
16. Weights & Measures	1	0.2
17. You Make the Difference	1	0.2
18. Unit 1 - Selection, Preparation & Storage	7	1.3
19. Unit 13 - Dried Beans & Other Legumes	7	1.3
20. Unit 2 - Vegetable Cooking - Science	7	1.3
21. Unit 10 - Planning & Timing Vegetable Cooking	7	1.3
22. Unit 4 - Vegetable Salads	7	1.3
23. Unit 5 - Fruit Salads	7	1.3
24. Quality + Price = Value	7	1.3
25. Basic Skills for Food Service Workers - Communication Skills	19	3.7
26. Communication Skills at Work: Dealing With Supervisors	8	1.5
27. Get Along With Others	9	1.7
28. Body Language	19	3.7
29. Dependability: A Be-attitude	8	1.5
30. Why Didn't I Think of That?	12	2.3
31. The Art of Getting Kids to Eat	4	0.8
32. Serving With Style	1	0.2
33. Courtesy: A Be-attitude	2	0.4
34. Unit 1 - Meat & Entree Science	11	2.1
35. Unit 6 - Ground Meat	9	1.7
36. Unit 10 - Wieners, Sausages	10	1.9
37. Unit 11 - Chicken	12	2.3
38. Unit 12 - Fish	11	2.1
39. Unit 17 - Cheese & Egg Dishes	10	1.9
40. Dishing It Out: A Lesson In Portion Control	3	0.6
41. Using Standardized Recipes	4	0.8
42. Portion Control: A Team Effort	2	0.4
43. Food: Keep It Safe To Eat	3	0.6
44. Kitchen Fire Safety	9	1.7

MATERIAL	FREQUENCY	PERCENT
45. Preventing Falls	9	1.7
46. Preventing Cuts & Strains	9	1.7
47. Preventing Machine Injuries	9	1.7
48. Preventing Burns in the Kitchen	9	1.7
49. Food Safe Series: Staphylococcus Aureus	9	1.7
50. Food Safe Series: Receiving & Storing Food Safely	14	2.7
51. Food Safe Series: Housekeeping & Pest Control	12	2.3
52. Food Safe Series: Hepatitis "A"	12	2.3
53. Food Safe Series: Microbiology for Food Service Workers	11	2.1
54. Food Safety Is No Mystery: A Training Program for Food Service Workers	21	4.0
55. Unit 14: Stocks	7	1.3
56. Unit 15: Soups and Chowders	7	1.3
57. Unit 16: Meat & Vegetable Sauces	7	1.3
58. Unit 18: Rice & Pasta Techniques	6	1.2
59. Unit 22: Sandwiches	7	1.3
60. Simplicity, Organization & Speed	3	0.6
61. Food Safe Series: Salmonella	1	0.2
62. Food Safety (filmstrip set)	1	0.2
63. Handling Food Safely: Basic Rules of Personal Hygiene	2	0.4
64. Performance Appraisals (slide set)	1	0.2
65. Public Relations Through Communication	1	0.2
66. Food Safe Series: Camylobacter	3	0.6
67. Purchasing I & II	2	0.4
TOTAL	519	100.0

Data in Table 10 indicate that 24 items of materials used in TSFSA certification training were on preparation of specific foods, 3 items were on food procurement, 22 items were on food safety and safe operation of equipment, 3 items were on food service, and 14 items were on other general skills needed for food service personnel such as communication skills. The frequency of using the items ranged from once to 22 times, with a mode of seven.

Evaluation of Circulated Materials by Borrowers:

As mentioned in Section II of this report, the library feedback form included three items that asked the users of library items to rate the content of these items, how the content was presented, and how useful was the item to the users. Figure 11 illustrates the ratings of the items used in the TSFSA certification training.

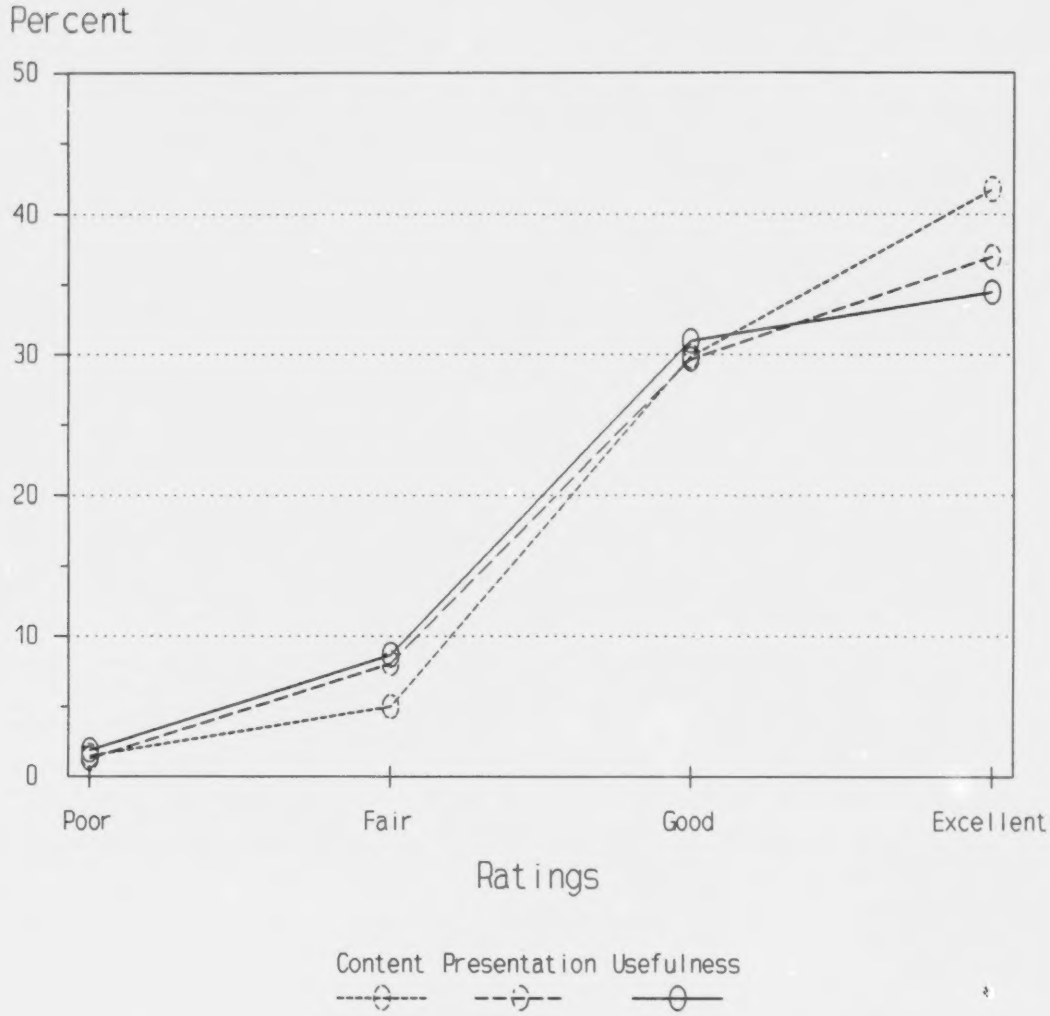

Figure 11. Evaluation of Library Materials Used in TSFSA Training

Figure 11 shows that between 41.8 and 34.5% (over one-third) of the times the items used in the TSFSA certification training were rated as excellent on all three scales: content, presentation, and usefulness. Less than 2.0% of the time these items were rated as poor. However, since the items were selected, and some items were purchased for the specific purpose and audience, none of the items should have been rated as poor in content or method of presentation, and particularly not in its usefulness to the audience. The rating of these items was slightly lower than the ratings of the entire items circulated in FFY 1991.

RECOMMENDATIONS

1. Because of the noticeable increase in library circulation as a result of the coordination with TSFSA, the library collection should be classified and listed in terms of the intended target population. These lists may then be sent to facilities or associations of the target population for selection and use.

2. Since coordination with TSFSA was a successful means of extending NET library services, similar coordination efforts should be attempted with other associations that deliver training, such as the Parent Teacher Association (PTA) and the American Dietetic Association (ADA).

3. Ratings of the library items used in TSFSA certification training should be used to improve the set of items identified for this purpose. Items that were rated as poor should be replaced by better items.

4. To further improve the quality of the library collection and tailor it to the needs of the intended target populations, library items should be reviewed by a sample of the target population and/or their educators, in addition to NET contract dietitians. This could be done in group settings specifically designed for material review and evaluation. Evaluation forms of the material may be filled out by individual members of the group.

IV. EVALUATION OF THE NUTRITION AND LIFE SCIENCES WORKSHOP

INTRODUCTION

Background:

As mentioned in Sections I and II of this report, conducting nutrition education workshops to prevent disease and enhance well-being of children in Texas is a major activity of the NET program. By providing information and resources to instruct teachers, child care providers, and food service personnel on the fundamentals of nutrition and how to convey this information to motivate children to make healthy food choices, the NET program helps children accept the nutritious meals and snacks served in school cafeterias and child care settings. The expected outcomes are improved nutritional status for children and reduced food waste in school and child care facilities.

Data describing changes in workshop participants' knowledge and attitudes are needed for three reasons. First, workshop performance data are needed to help identify areas where changes can be made to improve the curricula. By identifying areas where participants have already achieved mastery before the workshop, and identifying areas where mastery is not achieved even after the workshop, this study provides information workshop instructors can use in making decisions about how to allocate learning time during the workshop. For the curriculum developer, this study provides information to aid in directing how the curriculum can be revised and updated to make the workshop as effective as possible.

Second, information about the extent to which the workshops are successful in communicating child nutrition related concepts to members of the NET program's target population are needed to help document program impact. In addition, this data is useful in showing the public how federal funds are spent and in supporting requests to USDA for continued funding of the Texas NET program.

Finally, data about workshop performance are required to help make decisions about content and format of training still needed to enhance children's opportunities to learn and practice healthy eating habits.

In 1985, the Texas NET program conducted a survey of public school teachers to assess their needs and preferences for nutrition training and materials. Based on the results of that study and on guidance from the USDA regional office, an explicit objective in the NET program's amended State Plan for 1986 was to place increased emphasis on reaching public schools with NET resources. The same objective was stressed in the 1990-1991 state plan.

During 1986, interagency agreements and curriculum modifications resulted in TEA's approval of two of NET's workshops to be made available to public school teachers for advanced academic training (AAT) credits. The two workshops--Nutrition and the Young Child and Nutrition and Physical Fitness--became available for credit in 1987. Similar agreements resulted in the approval of two additional AAT workshops in 1988: Nutrition for Children and Nutrition and Life Sciences. Only the first workshop was completed and scheduled during FFY 1990. Following is an evaluation of the second workshop, Nutrition and Life Sciences.

Purpose:

This study was conducted to determine how well the Nutrition and Life Sciences workshop helped participants master nutrition related knowledge and attitude learning objectives; and how much the workshop participants were satisfied with the training received during the workshop.

The purpose of the workshop was defined as providing information on life sciences and nutrition laboratory experiences and how the two interrelate. The target workshop participants were junior and senior high school educators in public or non-profit private schools which participate in the USDA child nutrition programs.

Three learning objectives of the workshop were defined as follows:

1. Given information on the "Vee" method of inquiry, participants will be able to train their students on how to complete this diagram to clarify the nature, purpose, and knowledge of laboratory work in science/home economics.
2. Given information on calories consumed in food and the calories used for physical activities, basal metabolism, and food digestion, participants will be able to identify the consequences of energy imbalance.
3. Given information on the fat content of certain food items and its relationship to health, participants will be able to calculate the percent of fat using total calories.

Thus, this study was conducted to evaluate the extent of realizing these objectives in the workshop participants.

METHOD

Sample:

A total of three AAT Nutrition and Life Sciences workshops were conducted in 1991. There were 16 participants in these workshops. Two workshops were conducted for 7 participants and one workshop had two participants. Thirteen of the workshop participants were public school teachers and three were private school teachers.

Material:

Knowledge Tests:

A pretest, post test, and follow-up test were developed to measure the participants' mastery of factual and operational knowledge presented during the workshop. Test scores were used to determine gains in performance for each participant over time. Fifteen test items were developed by the NET Program Evaluator and other members of the staff. The items measured all stated workshop objectives.

Each test item had five response alternatives in a multiple choice format. Participants were instructed to select the one best response alternative for each item.

To ensure that the tests were representative of workshop content, their validity was checked by matching test items to the specification table for the workshop curriculum.

The pretest, post test, and follow-up test consisted of the same test items. The same items were used on the three tests to assure consistency of participants' responses and to increase the reliability of the three tests. The order of the test items and the order of the items' alternative responses were varied randomly to reduce the effects of test-specific memory. Appendix B of this report contains a copy of the tests.

Test reliability was checked by using SPSS-X procedure for computing coefficient alpha. Assessed reliability was .620 for the pilot study, and .71 for the final workshop delivery. This figure was judged to be fair since a test created using mastery approach gives a low reliability due to the ceiling effect.

Attitude Scale:

An attitude scale was developed by the program evaluator to measure participants' attitudes toward workshop content. The scale consisted of 12 Likert-type items that ran from one--representing a strongly disagree attitude--to five--representing a strongly agree attitude. The desired weight of the items was varied. The desired response was strongly agree for some items and strongly disagree for other items to minimize participants' tendency to select specific points on the scale.

Content validity of the attitude scale was assessed by checking items against the table of specifications for the workshop curriculum. Scale reliability was assessed using SPSS-X procedure for calculating Cronbach's coefficient alpha. Assessed reliability was .51 for the pilot study and .42 for the final delivery. These figures were judged to be fair. Low reliability was expected due to the limited number of items on the attitude scale and the ceiling effect encountered. When there is high agreement among respondents, reliability coefficient tend to be low because of the restriction in range. Appendix B of this report contains a copy of the attitude scale.

Training Evaluation:

A standardized training (course) evaluation developed by TDHS's Educational Services was used to measure participants' satisfaction with the workshop in general, and their suggestions for improving the workshop.

The form consisted of three categories: (a) the course, (b) the materials, and (c) the instructor. The course category consisted of six items: (1) clarity of objectives, (2) course organization, (3) course pacing, (4) course content, (5) practice provided by the course, and (6) feedback provided.

The material category consisted of nine items: (1) material organization, (2) relationship between material and subject taught, (3) material sequence, (4) material representation of real-life situations, (5) adequacy of amount of information in material, (6) practice opportunities provided by material, (7) feedback provided by material, (8) level of vocabulary used in material, and (9) visual appeal of material.

The instructor category consisted of nine items. The items asked participants to indicate if the instructor was: (1) knowledgeable of subject matter, (2) well-prepared, (3) encouraging to participants, (4) able to generate meaningful discussions, (5) able to listen actively to participants, (6) able to answer participants' questions effectively, (7) able to give useful examples, (8) competent in using audiovisual equipment, and (9) appropriately referencing materials.

Each item was scaled from one--representing a "Strongly Agree" reaction--to five--representing a "Strongly Disagree" reaction. The criterion for acceptable levels of satisfaction was set at 3.5. Ideal levels of satisfactions were set at 4.5 to 5.0. Each of the three categories was followed by an open-ended item asking for participant comments. The three categories were followed by an open-ended items asking for participant recommendations. Appendix B contains a copy of the training evaluation form.

Procedure:

The workshop was developed and evaluated in three stages: (a) formative evaluation stage, (b) pilot stage, and (c) final delivery stage. The procedures followed in the pilot and the final delivery stages were the same.

Formative Evaluation Procedures:

The Nutrition and Life Sciences workshop was developed by the NET Workshop Coordinator who attended a two-week training course at Pennsylvania (Penn) State University. Penn State advocated a project to integrate nutrition and life sciences. The university developed expertise and prepared materials in support of the project.

During development of the workshop, the Workshop Coordinator consulted the staff of Penn State University responsible for the project. Workshop materials were also based on materials made available by the university.

The workshop tests and attitude scales were developed by the Program Evaluator in consultation with the rest of the NET staff. The evaluator and the staff also reviewed the curriculum guide and materials, and suggested modifications. The modifications included addition of two exercises to develop workshop participants skills in understanding and applying the "Vee" heuristic, timing of activities designed to realize the first learning objective, and deletion of a complicated formula used to calculate calories in different foods.

The curriculum guide and materials were presented to NET contract dietitians during the semi-annual training session conducted on November 9, 1990. The dietitians were asked, after review of workshop activities and materials, to answer the workshop test and respond to the attitude scales. They were also asked to write down their reactions and suggestions on how to improve these instruments. In addition, instructors' suggestions on how to improve the workshops were given and discussed orally.

Responses and suggestions of the dietitians were reviewed after the training session. Based on the review, seven test items were changed. The wording of three attitude scale statements was modified. The Workshop Coordinator also revised the curriculum guide and materials to incorporate suggested modifications of the dietitians.

Pilot and Final Delivery Procedures:

The Nutrition and Life Sciences workshop, like other NET program workshops, was conducted free of charge by registered dietitians in the participants' own communities. The three workshops were conducted in a three-month period between May 2nd and August 8, 1991.

Exercises at the close of each section of the workshop curriculum provided feedback to participants about their mastery of specific learning objectives. Many of the exercises involved group problem solving. Frequent use was made of audiovisual materials. The workshop duration was 6 hours.

The workshop instructors administered the pretest and attitude scale at the beginning of the workshop; and administered both the post test and the attitude scale after the workshop training to provide data on participants' mastery of knowledge and attitude learning objectives. The training evaluation report was administered at the close of the workshop to measure participants' satisfaction with the workshop.

The follow-up test and attitude scales were mailed to the participants approximately three months after the close of the workshop to measure retention of knowledge and attitudes gained as a result of the workshop training. There were four respondents to the follow-up test and attitude scale.

It may be noted that the planned procedures called for administering the training (course) evaluation developed by TDHS Educational Services. However, because this form was new, the instructors mistakenly used the old training report in the second and third workshops. Consequently, the responses of participants to the training evaluation in the first workshop are reported. Only comments and suggestions of participants in the other two workshops are reported.

Statistical Analyses:

Scores of the pre, post, and follow-up tests were compared to determine the effect of the workshop on participants' mastery of knowledge objectives. Criterion references were preset such that 70% correct responses was considered acceptable and 90% correct responses signified mastery. Statistical tests of significance of observed gains were not conducted due to the small number of workshop participants.

In order to diagnose relative strengths and weaknesses of the workshop, goals were set for specific items and actual performance compared against the goal. Using the criterion references and actual performance of workshop participants before and after the workshop, it was possible to identify content areas in which mastery existed before the workshop, areas in which mastery was facilitated by participating in the workshop, and areas needing improvement.

Average attitude values before and after the workshop were compared. Criterion references were preset such that 3.5 represented acceptable levels of positive attitudes and 4.5 represented mastery of attitude learning objectives. Statistical significance of changes in attitude scores were not conducted due to the small number of workshop participants.

Percentages of participants who responded to each of the training evaluation items were calculated for the first workshop (the pilot study). Number of participants who made comments and suggestions were calculated for all three workshops.

RESULTS AND DISCUSSION

Results of the Pilot Study:

As mentioned above, the first workshop conducted was used to pilot the workshop and revise it before large scale statewide delivery. Four public school teachers and three private school teachers participated in the workshop. The Program Evaluator and Workshop Coordinator attended the workshop and took anecdotal notes on the workshop activities and interactions.

Workshop Participants' Knowledge:

Workshop participants showed performance improvements as measured by the pretest and the post test. At the close of the workshop, 85.7% of the participants exceeded the criterion for acceptable performance on the knowledge test (i.e., responded correctly to 70% or more of the test items). None of the participants scored at or above the criterion on the pretest. Table 11 contains the means and standard deviations of the participants' scores in the pretest and the post test.

Table 11

Means and Standard Deviations for the Knowledge Tests in the Pilot Study

Test	Mean	Standard Deviation
Pretest	9.71	2.75
Post Test	13.29	1.38

Data in Table 11 shows that the means were 9.71 for the pretest with a standard deviation of 2.75, and 13.29 for the post test, with a standard deviation of 1.38. The increase in the mean from 9.71 to 13.29 is most likely due to the positive effect of the workshop training. The standard deviation was relatively lower for the post test than for the pretest, indicating a considerable improvement in the performance of participants with low pretest scores.

Table 12 contains percent of participants giving correct answers to questions on the knowledge test.

Table 12

Percent of Correct Responses to Test Items in the Pilot Study

	Item	Pretest	Post Test
1.	Lab Experiment on the "Vee"	57.1	85.7
2.	Terms on the "Vee"	71.4	100.0
3.	Definition of concept mapping	85.7	57.1
4.	Activities consistent with the "Vee"	71.4	85.7
5.	Estimate of body energy need	57.1	100.0
6.	Definition of calorie	57.1	71.4
7.	Food highest in calories	28.6	100.0
8.	Description of typical fast food	100.0	100.0
9.	Definition of obesity	42.9	71.4
10.	Recommended percent of calories	57.1	100.0
11.	Weight maintenance/loss plan	85.7	85.7
12.	Food highest in calories	42.9	100.0
13.	Teenage body composition	85.7	100.0
14.	Sign of energy balance	57.1	71.4
15.	Nutrient content of whole and nonfat milk	71.4	100.0

It is apparent from Table 12 that acceptable performance was already achieved for six of the 15 test items on the pretest. Over 70% of the workshop participants knew or guessed the terms used to construct a "Vee" diagram (item 2); the definition of concept mapping (item 3); the activities consistent with the "Vee" heuristic method of inquiry (item 4); description of typical fast foods (item 8); actions that are considered in a successful weight maintenance/loss plan (item 11); facts about teenage body composition (item 13); and the nutrient contents of whole and nonfat milk (item 15). Thus, between 70% and 100% of the workshop participants knew or correctly guessed 40% of the items on the pretest.

Acceptable performance was reached for all but one item by the end of the workshop. Participants were not able to define concept mapping even though they were able to do so on the pretest. Workshop instruction was not effective in clarifying the concept. The mastery level was achieved with respect to one test item on the pretest. Due to workshop training, the mastery level was achieved with respect to 7 more items on the post test.

Workshop Participants' Attitudes:

Table 13 shows the means and standard deviations of workshop participants' responses to items on the attitude scale.

Table 13

Pre and Post Mean Scores on Each Attitude Scale in the Pilot Study

Scale	Pre-Score Mean	Post-Score Mean
1. The "Vee" enhances concepts	3.3	3.3
2. The "Vee" clarifies laboratory experiments	3.3	3.2
3. The "Vee" is effective in teaching	3.1	3.0
4. The "Vee" promotes thinking	3.3	3.9
5. Obesity and overweight	4.8	4.4
6. Importance of food labels	3.8	4.4
7. Fast foods and nutrition	3.3	2.6
8. Switching to skim milk	4.0	4.1
9. Use of drugs to control obesity	3.7	3.5
10. Calories needed over time	4.3	4.4
11. High fat diet and disease	4.4	4.6
12. Calories in fat	3.9	4.4
TOTAL	44.7	45.8

It is apparent from Table 13 that slightly more workshop participants scored above the criterion value of 3.5 on the five point scale items after the workshop. The total mean rose from 44.7 before the training to 45.8 after. Before the training, the participants' attitudes were acceptable toward obesity and overweight (item 5); role of food labels in planning nutritious meals (item 6); the likelihood of people switching form whole to nonfat milk (item 8); role of drugs in obesity control (item 9); change in calorie needs over time (item 10); the link between a high fat diet and disease (item 11); and fat as a contributor to calories (item 12). After the training, participants' attitudes were acceptable also toward the role of the "Vee" heuristic method of inquiry in promoting thinking (item 4).

It must be remembered that attitudes require more time and are harder to change than knowledge alone. A slight change in attitude due to one instructional intervention may be due to chance. However, such a change may indicate that the instruction was effective.

Participants' Satisfaction with the Workshop:

Table 14 shows the means and standard deviations of participants' responses to each of the scaled items on the training evaluation.

Table 14

Means and Standard Deviations of the Training Evaluation Scales in the Pilot Study

Item	Mean	Standard Deviation
The Course:		
1. Main points/objectives are clear	4.43	0.53
2. Was well-organized	4.29	0.49
3. Was well-paced	4.14	0.69
4. Contained the right amount of information	3.57	0.98
5. Gave opportunity to practice the new skills	3.43	0.79
6. Gave enough feedback	3.71	0.49
The Materials:		
1. Were well-organized	4.43	0.53
2. Directly related to the subject taught	4.43	0.53
3. Were sequenced logically	4.14	0.38
4. Represented real-life situations	4.43	0.53
5. Contained the right amount of information	4.00	1.00
6. Gave opportunity to practice the new skills	3.86	0.90
7. Gave enough feedback	4.14	0.69
8. Used the right level of vocabulary	4.00	0.00
9. Were visually appealing	4.00	0.00
The Instructor:		
1. Was knowledgeable about the subject	3.29	2.29
2. Was well-prepared	3.29	2.29
3. Encouraged class participation	3.14	2.19
4. Generated meaningful class discussion	2.71	2.06
5. Actively listened to understand others	3.29	2.29
6. Answered questions effectively	3.29	2.29
7. Illustrated the course with useful examples	3.29	2.29
8. Used class equipment competently	3.14	2.19
9. Referenced class materials appropriately	3.00	2.08

Table 14 indicates that the means of participants' responses to the first category (the course) on the training evaluation ranged from 3.43 to 4.43 out of five, reaching acceptable ratings on all but the fifth scale. Participants did not feel the workshop provided them with enough opportunities for practice.

Higher ratings were given on the scales of the second category (the materials) on the training evaluation. Acceptable ratings were given on all the scales for this category.

The ratings on the scales for the instructor category did not reach the acceptable criterion. It is apparent from the standard deviations that while participants' ratings were considerably consistent and homogeneous with regard to the first two categories, there were more deviations from the scales' means with regard to the instructor category.

Although the results of knowledge and attitude testing indicated gains in performance, significant behavior change based on one day intervention usually is not a reasonable expectation in terms of observable behavioral change. However, accumulation of the effects of these types of interventions ultimately will lead to changes in behavior.

Based on the results of the pilot study and the anecdotal accounts of the workshop interactions observed by the Evaluator and the Workshop Coordinator, the following revisions were done to the workshop:

1. The sequence of presenting the information on the "Vee" diagram was stressed, and so was the relationship between the terms on the diagram, using familiar definitions.

2. The definitions of kilocalorie and obesity were clarified and stressed.

3. The process of switching from whole to nonfat milk was explained in detail.

4. Tricep measurements and a discussion of the anatomy of the triceps were added to the workshop curriculum.

5. The method and materials used in the Nutrition Jeopardy game were improved.

6. Materials such as rulers and skinfold calipers were added to calculate percent body fat.

7. One group and one individual practice exercise on the "Vee" heuristic method of inquiry were added as workshop activities.

8. Materials were rearranged to make participant workbook packets easier to handle.

Results of Final Workshop Delivery:

Workshop Participants' Knowledge:

Workshop participants showed performance improvements as measured by the pretest and the post test. At the close of the workshop, 83.3% of the participants exceeded the criterion for acceptable performance on the knowledge test (i.e., responded correctly to 70% or more of the test items). None of the participants scored at or above the criterion on the pretest. Participants' performance on the follow-up test was worse than their performance on the pretest. Data on the pre and post tests are based on the performance of nine participants, while data on the follow-up test are based on the performance of four participants. Participants who returned the follow-up test were those who scored low on the pretest.

Table 15 contains the means and standard deviations of the participants' scores in the pretest, the post test, and the follow-up test.

Table 15

Means and Standard Deviations for the Knowledge Test in the Final Workshop Delivery

Test	Mean	Standard Deviation
Pretest	7.67	2.83
Post Test	11.89	1.69
Follow-up Test	5.50	.58

Data in Table 15 show that the mean was 7.67 for the pretest with a standard deviation of 2.83. The mean increased to 11.89 for the post test while the standard deviation decreased to 1.69. The mean and standard deviation for the follow-up test were 5.50 and .58 respectively. The increase in the mean of the post test is most likely due to the positive effect of the workshop training. The standard deviation was relatively lower for the post test than for the pretest, which indicates that participants with lower scores on the pretest gained considerably more from the workshop than participants with higher scores. The drop in the follow-up test scores was expected due to the three-month time period that elapsed between testing, and because the respondents to the follow-up test were fewer and performed relatively lower in the pre and post tests.

Table 16 contains percent of participants giving correct answers to questions on the knowledge test.

Table 16

Percent of Correct Responses to Test Items in the Final Workshop Delivery

	Item	Pretest	Post Test	Follow-Up Test
1.	Lab Experiment on the "Vee"	0.0	66.7	75.0
2.	Terms on the "Vee"	77.8	100.0	50.0
3.	Definition of concept mapping	44.4	88.9	25.0
4.	Activities consistent with the"Vee"	77.8	55.6	50.0
5.	Estimate of body energy need	77.8	100.0	0.0
6.	Definition of calorie	11.1	77.8	0.0
7.	Food highest in calories	33.3	77.8	25.0
8.	Description of typical fast food	55.6	66.7	50.0
9.	Definition of obesity	11.1	55.6	0.0
10.	Recommended percent calories	33.3	77.8	50.0
11.	Weight maintenance/loss plan	100.0	77.8	0.0
12.	Food highest in calories	33.3	77.8	50.0
13.	Teenage body composition	55.6	100.0	75.0
14.	Sign of energy balance	66.7	77.8	75.0
15.	Nutrient content of whole and nonfat milk	88.9	88.9	75.0

It is apparent from Table 16 that acceptable performance was already achieved for five of the 15 test items on the pretest. Over 70% of the workshop participants answered items 2, 4, 5, 11, and 15 correctly. After the workshop instruction participants were able to answer an additional six items (3, 7, 10, 13, and 14) correctly. Participant performance on item 4, concerning the activities consistent with the "Vee" heuristic, dropped. This indicates that the instruction they received in this area was not clear.

Comparisons between pre and post test scores in the pilot study and in the final delivery of the workshop indicate that participant performance in the pilot and the final delivery phases varied initially. The pretest items to which participants responded correctly on both occasions overlapped but were not identical. However, due to the substantial improvement in participants performance on the post test, considerable overlap occurred in their responses to individual post test items.

Revisions made as a result of the pilot study resulted in an apparent improvement in the workshop. Participant performance on the post test of the final workshop delivery (after the workshop revisions) improved more than participant performance on the post test of the pilot study (before the workshop revisions). However, it is obvious that instruction on the "Vee" heuristic and effects of applying the "Vee" to classroom activities is an area that still needs improvement.

Workshop Participants' Attitudes:

Table 17 shows the means and standard deviations of workshop participants' responses to items on the attitude scale.

Table 17

Pre and Post Mean Scores on Each Attitude Scale in the Final Workshop Delivery

	Scale	Pre Score Mean	Post Score Mean	Follow-Up Score Mean
1.	The "Vee" enhances concepts	3.4	3.0	2.7
2.	The "Vee" clarifies laboratory experiments	3.3	3.0	2.7
3.	The "Vee" is effective in teaching	3.3	2.9	2.7
4.	The "Vee" promotes thinking	3.4	3.0	3.0
5.	Obesity and overweight	3.6	4.1	3.3
6.	Importance of food labels	4.4	3.5	4.5
7.	Fast foods and nutrition	2.4	2.5	1.8
8.	Switching to skim milk	4.0	3.4	3.8
9.	Use of drugs to control obesity	3.3	3.3	4.8
10.	Calories needed over time	3.8	3.9	5.0
11.	High fat diet and disease	4.5	4.3	4.8
12.	Calories in fat	3.6	4.3	3.0
TOTAL		43.0	41.2	42.1

It is apparent from Table 17 that the number of workshop participants who scored above the criterion value of 3.5 on the five point scale did not change. Before the workshop training, participant attitudes were acceptable toward obesity and overweight (item 5); importance of food labels (item 6); switching to skim milk (item 8); calories needed over time (item 10); high fat diet and disease (item 11); and calories in fat (item 12). Participant responses on these items remained the same after the workshop.

Workshop instruction was not effective in convincing participants of the importance of the "Vee" heuristic method of inquiry or in the poor nutritional contribution of most fast foods. These results are similar to the results of the pilot study.

Participant Satisfaction with the Workshop:

Table 18 lists comments of workshop participants in the pilot and final delivery of the workshop, and their suggestions for workshop improvement.

Table 18

Comments and Suggestions to Improve the Workshops

Comment/Suggestion	Number of Respondents
Materials are good, creative, and useful	9
Include more activities	7
Information on calories, calorie calculation, and cholesterol is useful	6
Needs to be adapted for younger children	2
Needs to teach how to teach	2
Contains too much information	1
Include more information on carbohydrates and proteins	1

Table 18 indicates that when participants were asked to comment on the workshop elements and give suggestions for improving the workshop, they suggested less lecturing and more hands-on activities. They also suggested gearing the workshop to younger children. Participants were highly satisfied with workshop materials and the information they received on calories, calorie calculation, and cholesterol.

In general, results indicate a significant positive impact of the workshop on participants. Participants knew more after the workshop and were satisfied with the training received during the workshop.

Although the results of knowledge testing indicated significant gains in performance, significant behavior change based on a one day intervention usually is not a reasonable expectation in terms of observable behavioral change.

However, accumulation of the effects of these types of interventions ultimately will lead to changes in behavior.

It must be noted that the number of workshop participants in the final workshop delivery (nine participants) was very small. Generalizations based on the results of this delivery are questionable. It is safe to regard these results as merely indicative of the strong and weak points of the workshop. What adds credibility to these results, however, is that similar results were obtained in the pilot and in the final delivery. Considerably higher means and lower standard deviations on the post tests in the pilot and in the final workshop delivery indicate that the workshop was effective in developing participant knowledge and in realizing the second and third learning objectives. The results indicate consistently lower performance on test items related to the first learning objective.

RECOMMENDATIONS

1. There is a need to further revise the workshop instruction related to the first learning objective. Delivering instruction on methods of teaching nutrition is relatively new to NET workshop instructors. There should be emphasis on training them in this area.

2. Related to the previous recommendation, there should be a shift in workshop goals and priorities. The importance of methods of teaching nutrition must be relayed to workshop participants in addition to nutrition facts. Laboratory experimentation and methods of discovery, learning to learn, sources of information, and methods of teaching young children also need to be stressed in NET workshops.

3. Procedures followed in workshop scheduling need careful consideration. Scheduling a workshop and/or delivering it with only a few participants represents a dilemma. If NET canceled workshops with less than 15 participants, as stated in scheduling procedures, some prospective participants would be disappointed. Others might be discouraged from participating in other NET workshops. On the other hand, it is not cost effective to conduct workshops for a small number of participants. If a decision is made to change the minimum number of participants required to conduct a NET workshop, this should be adhered to for the sake of prospective participants.

4. Creative efforts and means of increasing workshop participation should be considered. Due to a decrease in the

allocation of funds for teacher training, fewer teachers are participating in the AAT workshops. NET should provide more incentives to teachers for participation in NET workshops in addition to credit hours. There is a need for negotiation and coordination with TEA and other agencies responsible for teacher training.

5. Section II of this report provides information on the number of times each NET workshop is conducted and the number of workshop participants. This information should be utilized in evaluating the workshops and in revising or combining workshops that attract fewer participants. A comprehensive needs assessment would identify needed workshops and workshop curricula statewide.

V. EVALUATION OF THE ETHNIC RECIPES/CYCLE MENU PROJECT

INTRODUCTION

Need For the Ethnic Recipes/Cycle Menu:

Habits of food selection and preparation are an important part of our culture. Food patterns can be developed based on cultural values, health perceptions, pleasant or unpleasant memories, and sensory exposures. Because food habits are an integral part of culture, people of different cultural and ethnic backgrounds are expected to differ in their nutrition knowledge, attitudes, and behaviors. Research findings support this hypothesis.

Borrud, Pillow, Allen, McPherson, Nichaman, and Newell (1989) studied the food group contributions to nutrient intake of whites, blacks, and Hispanics in Texas(1). Twenty-four-hour dietary recall interviews were obtained from 431 respondents 21 to 60 years of age. Analysis of food group contributions to nutrients such as saturated fat, dietary fiber, and cholesterol, that are linked with the development of heart disease and some cancers, indicated variations in ethnic group consumption of these selected nutrients. The investigators recommended that nutrition education be tailored to the needs of different ethnic groups so the health advantages and disadvantages of their culturally inherited eating habits could be emphasized.

Burdine, Chen, Gottlieb, Peterson, and Vacalis (1984) studied the effects of ethnicity, sex, and father's occupation on nutrition knowledge and behavior(2). The researchers surveyed snacks consumed by 2,695 seventh and eighth graders who represented the geographic and ethnic mix of Texas. The respondents were asked to indicate on a five-point scale how often they ate 15 snack foods that are related to heart health, both at home and at school. The researchers found that ethnicity was the most important predictor variable for the intake of snack foods at home and school.

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(1)Borrud, L.G.; Pillow, P.C.; Allen, P.K.; McPherson, R.S.; Nichaman, M.Z.; and Newell, G.R. (August 1989). Food group contributions to nutrient intake in whites, blacks, and Mexican Americans in Texas. Journal of the American Dietetic Association. 89:8, pp. 1061-1069.

(2)Burdine, L.N.; Chen, M.S.; Gottlieb, N.H.; Peterson, F.L.; and Vacalis, T.D. (February 1984). The effect of ethnicity, sex, and father's occupation on heart health knowledge and nutrition behavior of school children: the Texas youth health awareness survey. Journal of School Health. 54:2, pp. 87-90.

Consequently, they stressed the need for culturally relevant nutrition education.

Similar results were obtained when the effect of ethnicity on nutrition behavior was studied in other states. For example, Lai & Shimabukuro (1981) collected twenty-four-hour dietary recalls of a stratified random sample that consisted of 890 Hawaiian fifth, eighth, and eleventh graders(1). The respondents identified themselves as Hawaiian, Japanese, Korean, Black, Chinese, Filipino, White, Samoan, or other. Data were analyzed in terms of the 1980 Recommended Dietary Allowances (RDA) and the recommendations of the U.S. Senate Select Committee on Nutrition and Human Needs. Data analyses indicated that each ethnic group had particular food and taste preferences and beliefs associated with food.

Price & Price (1982) studied the effects of school lunch participation, socio-economic status, and ethnicity on food consumption of 845 school children eight to twelve years old in Washington State(2). The sample was stratified by ethnic group (Black, White, and Hispanic) and poverty level (above and below poverty level). The researchers found that nutrient intake of twenty common food items, such as milk, dairy products, fresh vegetables, and cooked vegetables, varied from one ethnic group to the other.

The cultural diversity of Texas is quite evident. Murdock (1991) estimated that the Texas population consists of 60.59% Whites, 25.55% Hispanics, 11.63% Blacks, and 2.23% other minorities(3). It is important to provide nutritious foods that would appeal to these ethnic groups in schools and child care facilities. Needs assessments conducted in 1983 and 1984 by the NET Program indicated the need for standardized ethnic recipes. Since most day care centers and many schools lack the staff and facilities to test and standardize recipes or develop cycle menus to incorporate them, the NET Program decided to develop and disseminate a set of ethnic recipes and cycle menus for three to six-year-old children.

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(1)Lai, M.K. & Shimabukuro, Sandra. (1981). Ethnic Differences in the Nutritiousness of Diets of Hawaii's Children. Paper presented at the annual meeting of the national association for Asian and Pacific American education. 19p.

(2)Price, D.W. & Price D.Z. (1988). The effects of school lunch participation, socioeconomic and psychological variables on food consumption of school children. Pullman College of Agriculture, Washington State University, 26p.

(3)Murdock, S.H. (1991). The population of Texas: historical patterns and future trends. Department of Rural Sociology, Texas Agricultural Experiment Station, Texas A&M University.

Request For Proposal:

The NET Program announced a Request For Proposal (RFP) for a "Recipe Standardization and Cycle Menu Project" in the Texas Register on January 31, 1986. The standards set for the recipes and the menu were the same as those set in the USDA quantity recipe guidelines. Specifically, the contractor was asked to:

(1) select and develop twenty-five recipes to include Mexican, Black American, German, Czech, Irish, Asian, and Scandinavian foods;

(2) calculate recipe contribution to USDA Child Care Food Program meal pattern requirements;

(3) kitchen-test and standardize the recipes for twelve and twenty-five servings; and,

(4) develop a three-week cycle menu to include breakfast, lunch, and afternoon supplement, utilizing both the ethnic food recipes and the USDA standardized recipes.

USDA guidelines that were related to the process of developing and standardizing the recipes, and other information that would be helpful in the process (e.g., work sheet for calculating the contribution of a recipe to school lunch requirements, a sample recipe, etc.) were attached to the RFP.

Criteria for evaluating the project proposals included: (a) quality and soundness of the task descriptions and timeliness for project implementation; (b) qualifications of staff involved with each phase of the project; (c) evidence that the applicant has access to the facilities, equipment, and services necessary to complete project requirements; (d) appropriateness of cost/price analysis; and (e) the degree to which a sample recipe and a sample work sheet specifying contribution to meal pattern requirements comply with the specified guidelines.

The RFP contract provisions reserved the right to approve all products developed with funds from the contract. The contract was to begin May 1, 1986 and be completed by May 1, 1987. A maximum of $10,000 was allocated to the project.

The NET Program invited public and private non-profit or for-profit organizations to submit proposals for the project. However, participating organizations were required to have adequate personnel and facilities to standardize and test the ethnic recipes.

Final Project:

Thirteen proposals were submitted from different universities in Texas. A three-member panel screened and evaluated the proposals, using the criteria specified in the RFP. Only four proposals met the minimum criteria. The Texas Womens University was awarded the project contract as its proposal scored the highest.

On May 1st, 1987, the Texas Womens University submitted the developed recipes and menu. Thirty recipes were submitted instead of the required twenty-five. However, only twenty-four recipes out of the thirty satisfied the standards set for the recipes. The university also submitted a sample three-week cycle menu for day care centers and family day homes as required by the contract. Review of the menu indicated that it introduced too many ethnic foods for the children. Consequently, the NET program contracted with a licensed dietitian to develop a six-week cycle menu instead. The six-week menu introduced the ethnic recipes gradually, interspersed with the USDA standardized recipes.

During August 1987, the NET Program distributed a final copy of the ethnic recipes and cycle menu to all of the three hundred one day care centers and sixty-nine day home sponsors in Texas. The day home sponsors were asked to make copies of the recipes and menu, and distribute them to the providers they sponsored.

Purpose of Study:

The present study was conducted to assess the value of developing and distributing the ethnic recipes and cycle menu to contractors of the Child and Adult Care Food Program in day care centers and to day home sponsors. The study answers the following questions:

1. To what extent were the distributed recipes and menus used by day care center contractors and day home providers?

2. In the opinion of the contractors and providers, how suitable were the recipes and the menu to the children under their care?

3. What problems did the contractors and providers encounter in purchasing, preparing, and/or serving the recipes?

4. How suitable was the cycle menu, in terms of length of time and food items, to children in day cares and day homes?

5. What suggestions did contractors and providers have to improve the recipes and menu?

METHOD

Sample:

Copies of an opinion survey were mailed to the Child and Adult Care Food Program contractors of about fifty percent (150) randomly selected day care centers in Texas, as listed in the records of the Licensing Division of the Texas Department of Human Services. The total number of children in these centers was 5,235.

Copies of the survey were also mailed to twenty-five day home sponsors. According to the Food Services Claims Processing System Master Listing of Child Care Food Program Sponsors of the Texas Department of Human Services (Document TF944-01, dated 8/8/89) there were sixty-nine sponsors, who sponsored 14,384 day home providers. The sponsors were divided into four categories, according to the number of providers they sponsored. Five out of the sixty-nine sponsors sponsored a small number of providers (twenty or less), twenty-five sponsored a medium number (21-99), twenty-nine sponsored a large number (100-399), and ten sponsored a very large number (400 or more). The evaluator selected, at random, four sponsors from the first category, eight sponsors from the second category, eight sponsors from the third category, and five sponsors from the fourth category.

The selected sponsors were asked to provide the NET program with the names and addresses of the providers they sponsored. Only thirteen out of the twenty-five sponsors responded. One respondent sponsored a small number of providers, five sponsored a medium number, another five sponsored a large number, and two sponsored a very large number. These respondents provided NET with the names and addresses of 2,380 providers. Ten percent (238) of these providers were selected, at random, to be surveyed.

Only forty-one of the surveys that were mailed to providers and one of the surveys mailed to day care centers were returned to NET because the addressees left without leaving a forwarding address. Nineteen providers returned the survey unanswered because they had never received the recipes and menus, and five returned the survey because they no longer worked as providers. Only 78.67% of the day care center contractors and 66.81% of the day home providers returned completed surveys. Table 19 shows the number and percent of the responding contractors and providers.

Table 19

Number and Percent of Respondents

Respondents	Number	Percent
Day Care Center Contractors	118	42.6
Day Home Providers	159	57.4
TOTAL	277	100.0

Instrument:

Two slightly different opinion surveys were developed to assess the extent of use and the effectiveness of the ethnic recipes and cycle menus. One of the surveys was developed for day care center contractors, and one for day home providers. Both surveys consisted of two main sections: (a) a general information section, and (b) an evaluation section. The general information section consisted of items that asked for the respondent's work facility, and the number and age of children under their care. The evaluation section consisted of items that were directly related to the extent of using each individual recipe and the effectiveness of the recipes and cycle menus. It included items that asked the respondents if they encountered problems in procuring, preparing, or serving the recipes, and in using the cycle menus. The respondents were also asked for suggestions on how to improve the effectiveness of both the recipes and the menus.

The surveys mailed to the day care center contractors and day home providers were identical except for one item. In addition to the items directed to day home providers, the day care center contractors were asked if the list of contributions to the meal pattern requirements was easily adjustable for the age levels of children under their care. A copy of the day care center contractor and day home provider surveys are included in Appendix C of this report.

Procedure:

Copies of the surveys were mailed to the sample between 6/11/1990 and 6/15/1990. This mail-out occurred about six months after the distribution of the recipes and menus.

A cover letter and a postage-paid envelope were attached to each copy of the survey. The cover letter instructed the sample to return the completed survey in the postage-paid envelope by 5/29/1990, and to contact the NET Program Coordinator if they had any questions concerning the survey. Several respondents called the Coordinator and informed her that they did not receive a copy of the recipes or the menus, and requested them. In the meantime, letters were mailed to the providers' sponsors to inform them that a sample of the providers they sponsored were being surveyed. The letters enclosed a list of the providers names and addresses.

Statistical Analysis:

The number and percentage of respondents to each item on the survey were calculated. One-way chi squares were conducted to test significance of deviations between the observed frequencies and the expected frequencies of variables such as the expense and time spent in preparing the ethnic and standard recipes, and the difference in plate-waste between both.

Two-way chi square tests of significance were conducted to assess the effect of variables such as children's number and age on responses to certain items on the survey, such as the number of times a recipe was used, and suggested modifications on the preparation of the recipes.

The extended statistical package for social studies (SPSS-X) was used to analyze the data. SPSS-X procedures for conducting the statistical analyses and the cross-tabulations were performed on the main frame.

RESULTS AND DISCUSSION

Frequency of Using the Ethnic Recipes:

A total of 118 day care center contractors and 159 day home providers responded to the opinion survey. The first item on the evaluation section of the survey asked the respondents about the number of times they used each ethnic recipe in serving meals to the children in their care. The number and percentage of day care center contractors and day home providers who responded to the question and who did not respond are reported in Table 20.

Table 20

Number and Percent of Recipe Users and Non-Users

Group	Recipe Use Yes	No	Didn't Respond
Day Care Center Contractors	71 (61.7%)	42 (36.5%)	2 (1.7%)
Day Home Providers	66 (44.3%)	83 (55.7%)	---
TOTAL	137 (51.9%)	125 (47.3%)	2 (0.8%)

From Table 20, it is apparent that more day care center contractors (61.7%) used the recipes than day home providers (44.3%). Chi square test of significance indicated that the difference in recipe usage between the contractors and the providers was significant (d.f. 2, P .003).

That more day care center contractors than day home providers used the recipes may be due, in part, to the procedures followed in distributing the recipes to each. Copies of the recipes were mailed directly to each day care center contractor. Day home sponsors received copies of the recipes and were asked to duplicate and distribute the recipes to their providers. Judging from the number of providers who claimed they did not receive a copy of the recipes, it seems plausible to assume that some sponsors did not duplicate and distribute the recipes to their providers. However, the total number of contractors and providers who used the recipes represents only 51.9% of the respondents to this item (137 respondents out of 264). Table 21 lists the number and percentage of times each recipe was used.

Table 21

Number and Percent of Times Each Recipe Was Used

Recipe	Number of Times Served	Percent
Main Dishes		
Chicken Chalupas	212	4.6
Veracruz Bean Tortillas	158	3.4
Tortilla and Cheese Casserole	201	4.3
Chili Corn Chip Bake	247	5.3
Crunchy Chinese Tuna Salad	165	3.6
Tuna Chow Mein Casserole	134	2.9
Chinese Beef patties	100	2.2
Italian Fish Roll-ups	63	1.4
Turkey Frittata	113	2.4
Hopping John	137	2.9
Creole Red Beans	232	5.0
Creole Wieners	193	4.2
Polynesian Pizza	142	3.1
Hungarian Goulash	224	4.8
Spicy Ground Beef	341	7.4
Pasticcio (Baked Macaroni)	217	4.7
Cereal Products		
Mexican Rice	398	8.6
Baked Cheese Grits	123	2.7
Indian Pilaf	48	1.0
Vegetables		
Chili Ricotta Potatoes	123	2.7
Corn and Green Chili Casserole	127	2.7
Corn and Zuccini Mexicana	156	3.4
Gingered Carrots	132	2.9
Chinese Mixed Vegetables	232	5.0
Vegetable Curry	73	1.6
Soup		
Mexican Corn Soup	183	4.0
Dessert		
American Indian Cornmeal Cookies	161	3.5

Table 21 indicates that some recipes, such as Mexican Rice, Spicy Ground Beef, and Chili Corn Chip Bake, were used more often than other recipes, such as the Indian Pilaf, the Italian Fish Roll-ups, and the Vegetable Curry. These results suggest that some of the recipes were more suitable for use than others. Chi square goodness of fit tests (NPar Tests) on the individual recipes indicated that the number of times each recipe was used differed significantly. Times ranged from 0 to 31 per individual respondent.

Effectiveness of the Ethnic Recipes:

Recipe Servings:

To explore possible reasons for variations in using the recipes and in their relative effectiveness, the respondents were asked if having the recipes standardized for 12 and 24 servings assisted them in adjusting the recipes for the number of children they were serving. Most of the respondents (86.3%) said it did, compared to only 13.7% who said it did not. Those who responded negatively to this item were day home providers who prepared meals for small numbers of children.

Recipe Adjustment to Meal Pattern Requirement:

Day care center contractors were asked if the list of contributions to the meal pattern requirements were easily adjustable for the age levels of children in their care. Over 91% of the contractors said it was, and 8.7% said it was not. No significant difference was found in the number of meal pattern adjustments due to age.

Recipe Procurement:

Item number 3 on the evaluation section asked the respondents if some of the recipe ingredients were difficult to find. The majority of respondents (85.8%) said that the ingredients were not difficult to find, compared to 14.2% who said they were. Chi square indicated that the difference between both numbers was significant (d.f. 26, P .00). The ingredients cited as difficult to find were bamboo shoots, cajun sauce mixes, chinese vegetables, creole wieners, curry powder, okra, pimento cheese, soy sauce, and turmeric.

Recipe Cost:

Item number 4 on the evaluation section of the survey inquired about the cost of preparing the ethnic recipes. The item asked if some of the ingredients used in the ethnic recipes were more expensive than ingredients usually used. About one-third of the respondents (32.1%) said they were, compared to 67.9% who said they were not. Chi square indicated that the the number of those responding positively and those responding negatively was significant (d.f. 26, P .00). The ingredients listed as expensive were meats such as beef, chicken, cod fillet, link pork sausage, and turkey ham; spices such as crushed red pepper, curry powder, oregano, and turmeric; some dried or fresh vegetables such as canned beans, chow mein, green chili pepper, dried onion, dried parsley, water chestnuts, and zucchini; dried fruit; blanched almonds; raisin and rye bread; cheese; sour cream; and cantaloupe out of season.

Recipe Preparation:

To find out if the recipes were suitable as developed or if they needed modifications, item number 5 on the survey asked the respondents if they prepared the recipes exactly as they were written and, if not, to state the recipe(s) they modified and the modification they made. Table 22 lists the recipes the respondents modified and the type of modification.

Table 22

Recipes Modified and Type of Modification

Recipe	Modifications
Main Dishes	
Chicken Chalupas	Made own refried beans (pinto) Replaced corn tortillas with tostada Did not use sour cream
Veracruz Bean Tortillas	Substituted flour for corn tortilla
Tortilla and Cheese Casserole	Used cheddar cheese Used green bell pepper instead of chili pepper Did not use chestnuts Used grated cheddar cheese instead of Monterey Jack cheese
Chili Corn Chip Bake	Substituted ranch for pinto beans Did not use onions Used fresh beans
Turkey Frittata	Did not use onion
Hopping John	Substituted onion salt for fresh onion Used dried instead of canned blackeyed peas
Creole Red Beans	Use of dehydrated vegetable Use of pinto beans Substituted ground beef for sausage Used navy beans
Creole Wieners	Added onion and pepper
Polynesian Pizza	Did not use pineapple
Spicy Ground Beef	Did not use orange juice or raisins Used brown sugar instead of raisins Replaced by Carne Guisada ConEspesias Did not use red peppers
Pasticcio (Baked Macaroni)	Used American white cheese instead of mozzarella
Cereal Products	
Mexican Rice	Did not use chicken broth, bell or red pepper, or oregano Used tomato sauce and cumin instead of oregano
Soup	
Mexican Corn Soup	Added chicken

Table 22 indicates that thirteen out of the twenty-seven recipes were modified. The modifications consisted of substituting some ingredients with less expensive ones that were in season, adding ingredients to enrich a recipe, or eliminating ingredients to simplify a recipe or make it less costly.

Chi square test of significance indicated a significant difference in the number of day care center contractors and day home providers who adjusted the recipes to meet children's needs. Significantly, more child care centers (53.9%) than day home providers (34.2%) adjusted the recipe (d.f. 2, P .005). However, when the age of the children was controlled, there was no significant difference in the number of those who adjusted the recipes and the number of children that they cared for.

Effectiveness of the Ethnic Recipes Relative to the Standard Recipes:

Items 6, 7, and 8 were designed to compare the effectiveness of the ethnic recipes relative to the standard recipes. When respondents were asked how expensive the ethnic recipes were compared to their usual recipes, 27.6% said that it was more expensive. However, 4.5% thought that the ethnic recipes were less expensive and 67.9% thought that the ethnic recipes were about as expensive as their usual recipes.

The respondents were asked how much time they spent preparing the ethnic recipes compared to the time they spent preparing their usual recipes. The trend of the response was similar to that of the previous question. Twenty-eight percent of the respondents said they spent more time preparing the ethnic recipes, 6.8% said they spent less time, and 65.2% said they spent about the same time.

Similarly, when the respondents were asked to compare the plate waste of the ethnic recipes to the plate waste of their usual recipes, 37.2% said it was more, 9.3% said it was less, and 63.5% said it was about the same.

In general, it seems that there was no significant difference between the ethnic recipes and the standard recipes with regard to cost, preparation time, or plate waste.

Problems Encountered When Using the Recipes:

Preparation Problems:

The respondents were asked if they encountered any problems in preparing the recipes (item number 9). The majority of the respondents (82.1%) said they did not, compared to 17.9% who said they did. Table 23 cites the problems the respondents encountered in preparing the ethnic recipes and the number of respondents who cited each problem.

Table 23

Problems Encountered in Preparing the Ethnic Recipes

Problem	Number of Respondents
Untasty to children	20
Time consuming	5
Instructions unclear	4
Menu is pre-planned	3
Unfamiliar recipe	3
Spicy	2
Unfamiliar ingredients	2
TOTAL	39

The problems cited in Table 23 were expected in the case of any new or unfamiliar food. These problems depend on the number of times a new food is offered and modified for the special group and environment. Continuous exposure to new foods increases our willingness to try different foods and consume different nutrients.

Portioning Problems:

Item number 10 asked the respondents if they encountered problems in portioning the ethnic recipes for appropriate serving sizes. The majority of respondents (94.1%) said they did not, compared to 5.9% who said they did. The respondents who encountered problems in portioning the recipes said that with respect to all the recipes, portions were too big for the children.

Suggestions for Using the Recipes:

The respondents were asked for suggestions that would make the recipes better/more useful to them. Table 24 lists the respondents suggestions and the number of day care center contractors and day home providers who mentioned each suggestion.

Table 24

Suggestions for Improving the Ethnic Recipes

Suggestions	Centers	Providers	Total
Use a Spanish version of the recipes	0	22	22
Use less spicy recipes	6	7	13
No need for ethnic recipes	8	5	13
Include more familiar recipes	6	5	11
Develop recipes suitable for different age groups	3	5	8
Use recipes that are easy to prepare	3	4	7
Use less casseroles and recipes with less ingredients	4	2	6
Use recipes that are less time consuming	4	2	6
Use less expensive recipes	1	4	5
Measure recipe ingredients for 6 or 8 servings	1	4	5
Standardize recipes for 50-100 servings	5	0	5
Include recipes for sick children	1	2	3
Increase southwestern recipes (Bean Chalupas/Beef Soups)	0	3	3
Use recipes for microwave oven/pictures	2	1	3
Develop the recipes in series	0	2	2
Include more snacks	2	0	2
Prepare small amounts for children to taste	2	0	2
Use familiar words	0	2	2
Use more fresh vegetables	0	2	2
Use less onion, cooked celery, water chestnut, blackeyed peas, and green peppers	1	1	2
Write the recipes in a cookbook style	1	1	2
Include American and Italian recipes	0	1	1
Include more dessert recipes	0	1	1
Include finger food recipes	0	1	1
Provide more training opportunities for providers	0	1	1
Use less fish recipes	0	1	1
Use more rice recipes	0	1	1

Frequency of Using the Cycle Menu:

About two-thirds of the respondents (65.3%) reported that they used the cycle menu. When they were asked about the number of times they used it, 55.2% said they used it once, 15.5% said they used it two or three times, 9.4% said they used it three or four times, while 23.8% said that they used it five times or more. These numbers are reasonable considering the fact that some of the day home providers did not receive the menus in the first place, and that only six months elapsed between distributing the menus and conducting the survey.

Effectiveness of the Menu Cycle:

The respondents who used the menu were asked if having the menu available helped reduce the time required for menu planning. Over two-thirds of the respondents (67%) responded positively, compared to only 33% who said that the menus did not reduce the time required for menu planning.

In addition, the respondents were asked if they found it necessary to substitute items in the cycle menus. About sixty percent of the respondents (59.1%) said they did not, and 40.9% said they did. The reasons selected for item substitution are listed in Table 25, together with the number and percent of those who selected each reason.

Table 25

Reasons for Substituting Items in the Cycle Menu

Reason	Number of Respondents
Expense	12
Seasonal Availability of Foods	11
Preparation Time	6
Holidays or Special Celebrations	5
Emergency Substitutions	4
USDA Donated Foods	3
Other	5

Other reasons cited for substituting a menu item with another are not having the tools required to prepare the item, or because the item does not turn out as expected after preparation, or not being sure of the outcomes of item preparation.

When the respondents were asked about the practical length of time for a cycle menu, over half of the respondents (51.9%) said it was four weeks. Approximately the same number of respondents (20.7% and 19.2% respectively) thought that six weeks or two weeks was an appropriate length of time for cycle menus.

Suggestions for Using the Cycle Menu:

The respondents were asked for suggestions that would make the cycle menu better/more useful to them. Table 26 lists respondent suggestions, and the number of respondents who proposed each suggestion.

Table 26

Suggestions for Improving the Cycle Menu

Suggestions	Centers	Providers	Total
Add crackers or cornbread in menus with no bread items	1	0	18
Cycle the menu for 5 weeks	0	2	2
Do not include several new food items in a menu	5	6	11
Improve the color and texture of the food in some menus	1	1	2
Make cycle correspond with vegetables in season and on specials	3	6	9
Use more food variety and substitutes (more flexible)	11	9	20
Develop in Spanish	1	23	24

RECOMMENDATIONS

1. The two-step distribution procedure used in distributing the ethnic recipes and cycle menus to day home providers was not effective. Most of the sponsors, after receiving these materials from NET, did not copy the recipes and menus and distribute them to the providers they sponsored. Less expensive copies of distributed materials may be produced and

distributed directly to the facilities of the intended users. It is also feasible to distribute only samples of the material, to be followed by other materials upon request, or identify those who intend to use the recipes and limit the distribution to them.

2. Instead of the twenty-seven ethnic recipes, the project may continue with half or one-third that number. Developing the recipes and introducing them in a series over a long period of time allows for incorporating the ethnic recipes with the regular recipes in a three-week cycle menu, as was envisioned in the RFP. It is more economical to distribute the material, recipes, and menus, and to follow-up with only those who actually use the material.

3. Part of the production specifications of the ethnic recipes could have included substitutions for expensive ingredients, suggestions on food substitutions, and short-cuts in recipe preparations. These modifications could be done by the producers or by the NET staff if the project is to proceed in a second stage. A number of these modifications were provided by respondents and are listed in this report. Further modifications can be made with the help of the Texas Department of Agriculture to promote Texas agricultural products.

4. It was suggested by the respondents that the ethnic recipes include finger foods, snacks, and more desserts. Since finger foods and snacks are suited to children in day homes and day care centers, the ethnic recipe collection would be more beneficial if these two types of food were included.

5. Day home providers suggested the translation of the ethnic recipes and cycle menu into Spanish. Several survey forms were returned with comments in Spanish, some stating that they were not able to read the survey and/or the recipes because they could not read English. Due to the large Spanish speaking population in Texas, the recipes and menus are being translated into Spanish and upon completion will be distributed to those who request them.

6. The respondents suggested including more bread and bread alternates to the menu, and suggested improving the color and texture of foods on the menu. Adding more bread and bread alternates to the menu would be in line with the Dietary Guidelines for Americans. In addition, improving the color and texture of foods makes it more appealing, especially to young children.

7. As mentioned above, introducing new foods and ethnic foods to the diet of young children is important to develop their taste for different foods and an appreciation of their own culture

and the culture of others. Most of the recipients of the ethnic recipes used them and some used them up to 5 times, in spite of the relatively short time between distribution of the recipes and conducting the survey. Thus, there is a need to continue promotion of the ethnic recipes and cycle menus, after incorporating the above recommendations.

VI. GENERAL EVALUATION OF THE NET PROGRAM

INTRODUCTION

Background:

Formal evaluation of the Texas NET program was initiated in October 1984, to meet federal requirements for program evaluation and to collect information that helps make the program as effective as possible. Since then, a number of studies have been conducted each year to develop information the General Accounting Office cited in 1982 as being necessary to:

(1) effectively administer the program;

(2) guide program revisions and planning;

(3) ensure that federal funds are spent effectively; and

(4) supply the USDA with data to submit to Congress to aid decisions about how to apportion scarce resources.

During FFY 1991, five studies were conducted to answer the following questions about performance of the Texas NET Program:

1. To what extent did the NET Program achieve its participation goals during FFY 1991?
2. What was the effect of coordination between NET and TSFSA on NET library circulation and collection?
3. How effective was the Nutrition and Life Sciences workshop in helping participants master nutrition knowledge and attitude learning objectives?
4. How often were distributed ethnic recipes and cycle menus used in day care centers and day homes, and how suitable were they for children in these facilities?
5. How effective was the Texas NET Program in achieving its goals, relative to its resources?

The first four questions were answered in the previous four sections of this report. The fifth question is answered in this section.

Purpose:

The purpose of this study was to assess overall program performance during FFY 1991. The results of the evaluations conducted during the year were combined to produce an index of program effectiveness. Key questions answered in this general evaluation of the program included the following:

1. Relative to its resources, was the overall effect of the Texas NET Program in 1991 positive, negative, or nonsignificant?
2. Did the program promote positive changes in child nutrition related knowledge, attitudes, and consequently behaviors of significant numbers of individuals in NET's priority populations?
3. What were the strengths and weaknesses of overall program performance during FFY 1991?

PROGRAM RESOURCES

Two main resources of the Texas NET Program are its budget, which provides the material resource; and its staff, which provides the human resource. Table 27 summarizes and compares the program's resources for the past seven years.

Table 27

Texas NET Program Resources for the Past Seven Years

Resources	FFY85	FFY86	FFY87	FFY88	FFY89	FFY90	FFY91
BUDGET	294,060	294,060	295,860	315,290	315,000	318,642	513,518
STAFFING							
Coordinator	1.000	.300	.125	.750	1.000	1.000	1.000
Evaluator	1.000	1.000	1.000	0.850	1.000	1.000	1.000
Program Specialists	2.000	1.500	2.000	2.000	2.000	1.500	2.000
Librarian	—	—	—	—	—	0.500	1.000
Assistant	—	—	—	—	—	—	1.000
Clerical & Automation Support	3.000	2.670	3.000	3.000	2.500	3.000	2.000
Consulting Nutritionists	2.000	1.900	1.800	1.600	1.600	1.600	1.800
Total Staff	9.000	7.370	7.925	8.200	8.100	8.100	9.800

It is apparent from Table 27 that NET program funding increased considerably over 1990. This increase brings the 1991 budget 74.6% over the program's budget for FFY 1985 and 61.2% over 1990. This increase reflects the inflation rate and a need to expand program activities during 1991. In addition, the USDA funding formula for the NET program is based on the number of school children in the state. In Texas, the number of children attending public schools grew from 2,884,000 in 1985 to 3,382,256 in 1991 (i.e., over 17.28%).

On the other hand, organizational constraints have generated a reduction in NET staffing from nine full-time equivalent positions in 1985 to approximately eight during the first half of FFY 1991. The main reduction was reflected in the Workshop Coordinator (Program Specialist) position, which was reduced from one full-time equivalent to a half-time equivalent; and in the number of contract dietitians. Also, program activities were disrupted in the first half of 1991 due to high turnover in program staff and the inability to immediately fill vacant positions.

However, the second half of 1991 witnessed an increase in the NET staff similar to the increase in the budget. The Workshop Coordinator position became a full-time position and an Assistant position was created. The number of contract dietitians rose from 16 in 1990 to 18 in 1991. Thus, in 1991 the total number of NET staff increased about 21% over 1990.

PROGRAM ACTIVITIES

Table 28 summarizes the main activities of the program since 1985.

Table 28

Texas NET Program Activities for the Past Seven Years

Activities	FFY85	FFY86	FFY87	FFY88	FFY89	FFY90	FFY91
WORKSHOPS							
Developed	2	2	3	1	2	2.0	—
Conducted	165	145	185	183	112	103.0	164.0
LIBRARY							
Acquisitions			180	420	68	304.0	606
Items Circulated/Month	70	100	100	150	189	231.4	274.3
Catalogs Distributed	10,000	12,000	680	200	632	490.0	2,489
MATERIALS							
Acquisitions	5	5	15		5	5	10
Distributions	9,700	10,800	12,800	17,200	11,800	11,776	24,645
SPECIAL PROJECTS							
Mini-grants/Development Contracts	3	3	2	0	1	2	4
Evaluation/Needs Assessment Studies	6	7	6	5	5	5	6
Persons Reached	**6,200**	**9,700**	**10,900**	**10,300**	**23,343**	**25,760**	**622,576**

Table 28 shows that expansion in program resources resulted in similar expansion in program activities in most areas. The number of workshops conducted rose from 103 workshops in 1990 to 164 workshops in 1991, an increase of more than 59%.

Acquisition and circulation of library materials increased considerably over 1985 and 1990, perhaps due to the relative stability and growth of resources allocated to the library. In 1991, library acquisitions were almost twice those of 1990. Monthly circulation of library items was 18.5% more than circulation in 1990. The number of catalogs distributed in 1991 was more than five times those distributed in 1990.

Material acquisition and distribution as well as other aspects of program activities, such as the mini grants, fluctuated slightly during the past six years and increased during 1991. The number of mini grants and material acquisitions doubled in 1991. The number of distributed materials increased 109.3 % over 1990. In 1991, participation in the NET program was more than one hundred times the participation in 1985, and more than 24 times the participation in 1990.

Considering the program's activities relative to its resources, one must conclude that the program is administered efficiently, and that it is realizing its goals.

META-ANALYSIS OF PROGRAM OUTCOMES

Results of evaluations of specific NET activities were integrated to develop an index and analysis of overall effectiveness of program performance in 1991. The vote counting method for program meta-analysis was applied to integrate results of evaluations conducted during FFY 1991. These evaluations included varied data collection and analysis procedures that were described in detail in the previous sections of this report. Following is a summary of these procedures:

- To estimate the effectiveness of the program in achieving its participation goals for FFY 1991, goals were set for each of the program's major activities and for each of its target populations. Participation goals were estimated based on current priorities, current staffing, and prior participation figures.

- To estimate the effectiveness of the coordination between the NET program and TSFSA in utilizing library services for food service personnel certification training. The percentage increase in library circulation due to this coordination was calculated. Ratings of materials used in training were used as an estimate of improvement in library items used and/or purchased for this purpose.

- Means and standard deviations of pretest and post tests were compared to determine the effect of the Nutrition and Life Sciences workshop on participant mastery of knowledge objectives. Criterion references were set for acceptable and mastery performances as measured by participant performance on the knowledge tests. Average attitude values before and after the workshop were compared and evaluated against pre-set criterion references. Mean ratings of participants to three training categories and their comments and suggestions for workshop improvement were used to determine participant satisfaction with the workshop.

- To estimate the frequency and effectiveness of using ethnic recipes and cycle menus that incorporate ethnic recipes with standard recipes, the number and percentage of respondents to each item on an opinion survey were calculated. Chi square tests of significance were conducted to assess variance between observed and expected numbers of participants who selected each response, and to assess the effect of age of the children in the day care centers and day homes on respondents' responses to items on the survey.

RESULTS AND DISCUSSION

To apply the vote counting method for integrating results across these separate evaluations, counts were made of all findings that were classified as positive, negative, or nonsignificant. Tallies were compared and the model category accepted as giving the best estimate of NET Program effectiveness. Table 29 summarizes results of the meta-analysis.

Table 29

Results of Meta-Analysis of Program Outcomes

Activity	Data Analysis	Indicator	Result
Workshops:			
	Goal-percentage	Number of nutrition workshops	Positive
	Goal percentage	Number of food service personnel workshops	Positive
	Goal percentage	Number of workshop participants	Positive
	Goal percentage by target population	Number of workshop participants from public schools	Negative
	Goal percentage by target population	Number of food service personnel participating in workshops	Positive
	Goal percentage by target population	Number of sponsors and providers participating in workshops	Positive
	Goal percentage by target population	Number of public school children reached	Positive
Lending Library:			
	Percentage increase over 1990	Total circulation	Positive
	Goal-percentage by target population	Number of public school children reached	Positive
	Goal-percentage by target population	Number of children reached in child care facilities	Positive
	Rating scale on borrowers feedback forms	Substance of borrowed materials	Positive

Activity	Data Analysis	Indicator	Result
Lending Library (continued):	Rating scale on borrowers feedback form	Usefulness of borrowed materials	Positive
	Rating scale on borrowers feedback form	Borrower's satisfaction	Positive
Development and Distribution of Instructional Materials:	Percentage increase over 1990	Number of materials developed	Positive
	Percentage increase over 1990	Number of materials distributed	Positive
Presentations, Exhibits, and Fairs:	Goal-percentage	Number of fairs	Negative
	Percentage increase over 1990	Number of publications	Negative
Coordination With Related Programs:	Percentage increase over 1990	Number of meetings	Positive
Coordinating Library Services With TSFSA Training:	Percentage increase in circulation	Percent of circulation to TSFSA training to total circulation	Positive
	Percentage increase in food service personnel	Percent of participating TSFSA food service personnel to total participation	Positive
	Improvement in library collection tailored to food service personnel	Ratings of library materials borrowed for TSFSA training	Negative
Nutrition and Life Sciences Workshop:	Pre/post comparisons of knowledge	Means of pre/post tests	Positive
	Criterion referenced comparisons of pre/post tests	Percent correct on pre/post test items	Positive
	Pre/post comparisons of attitude	Means of pre/post attitude scales	Nonsignificant
	Criterion referenced comparisons of pre/post attitudes	Mean scores on each attitude scale	Nonsignificant
	Mean rating scores on the training evaluation form	Mean scores on each item on the training evaluation form	Nonsignificant
	Comments and suggestions to improve the workshop	Number of positive comments to negative comments	Negative
	Comments and suggestions to improve workshop materials	Number of positive comments to negative comments	Positive

Activity	Data Analysis	Indicator	Result
Ethnic Recipes/Cycle Menu Project:			
	Percentage of respondents reporting use of recipes and menus	Percent of those who used the recipes and menus to those who did not	Positive
	Number of times each recipe was used	Number of recipes that were used and range of times	Positive
	Percentage of satisfied respondents	Number of recipes that were modified by the respondents suggestions for improvement	Negative
		Percent of respondents who encountered problems in preparing, portioning, or serving the ethnic food	Positive

Table 29 indicates that when data were integrated across the evaluations conducted during FFY 1991 it revealed an overall positive impact of the NET Program in Texas. Thirty-two evaluations were conducted to estimate the effectiveness of the main aspects of the program. Twenty-three of these evaluations were positive, three were nonsignificant, and six outcomes were negative. The negative results were due to a need to improve some of NET services and procedures, and failure of the program to prioritize its outreach to different target populations. The only decrease in services was in the number of health and nutrition exhibits and fairs in which NET was a participant. Evaluation of program outreach showed that all participation goals were attained.

The number of participants in some of the workshops conducted in 1991 was less than the number required to conduct these workshops according to workshop procedures. This indicates a need for a closer look at the procedures followed in scheduling workshops, and on the appeal of some of the NET workshops to prospective participants.

Although one of the library evaluation outcomes suggested a need for continued attention to promoting its services to educators in child care facilities, the lending library collection attracted more patrons and circulated more nutrition and food service management materials during 1991 than in any previous year.

In 1991, the NET program also made large strides toward improving coordination with other public sector programs and agencies engaged in child nutrition activities such as TEA and TDA, and toward publicizing its services statewide. This coordination is an extension of a trend that started in 1990 and is expected to continue due to the long range strategic planning between NET and other agencies. Effects of such efforts are expected to materialize in the form of a substantial increase in NET outreach during the subsequent years.

NET workshops were found in the past six years to be reliable means for improving child nutrition related knowledge and attitudes of educators and food service personnel, in schools and child care facilities. Likewise, evaluation of the Nutrition and Life Sciences workshop indicated that the workshop was effective in promoting desired changes in child nutrition related knowledge of workshop participants. In addition, participants expressed their satisfaction with the workshop materials in particular. This would positively influence participant behavior related to acquired knowledge. However, results of the evaluation indicate a need for further workshop revisions.

The outcomes of all analysis conducted to assess frequency as well as effectiveness of using the ethnic recipes and cycle menus when incorporating them with standard recipes were positive. The majority of the respondents used the recipes and menus in day care centers and family day homes. Significantly more respondents indicated that they did not encounter problems in procuring, preparing, or serving the recipes. There were several suggestions for improving the recipes and a need to improve the implementation procedures. These outcomes suggest the generally positive effect of material distribution on achieving goals of the NET Program.

RECOMMENDATIONS

1. Since priorities are set for reaching different target populations in the NET state plan, an action plan must follow to specify suitable means of implementation. The program staff must systematically identify, implement, and evaluate procedures periodically to assess the effectiveness of these procedures in reaching the targeted priority populations.

2. Since the last needs assessment study was conducted in 1984, there is a need to conduct a major needs assessment study to identify NET services required for various target populations, including direct services to children and their parents. The study would provide direction in setting goals and priorities for the NET Program.

3. There is a need to follow-up on the results of evaluating the different activities of the NET program. Continuous improvement in services is a significant indicator of successful programs, and a major reason for conducting evaluations. Results of the evaluations conducted in 1991 point to several areas that need improvement in procedures, materials and/or methods.

APPENDIX A

EVALUATION INSTRUMENTS USED IN NET PROGRAM OUTREACH

WORKSHOP REGISTRATION FORM

General Information (please print)

Name of Workshop: ______________________________ Date: __________

Your Name: ____

Sex: Male____ Female _____

Ethnic Origin: White____ Black____ Hispanic_____
Asian/Pacific Islander_____ American Indian/Alaskan Native_____

Your Social Security Number: _________________________

Name of Your Work Facility: ____

Work Address: ____
Street or P.O. Box

____
City State Zip Code

Work Telephone Number: _________________________________
Area Code

Please circle the number next to the answer you choose.

1. For what type of facility do you work?
   1 Public school
   2 Private grade school
   3 Day care center
   4 Family day home
   5 RCCI
   6 Other. Please specify: __________________________

2. What is your function?
   1 Educator (a teacher, administrator, health educator, teacher aide, nurse, and other personnel who work in instructional capacity)
   2 Food service personnel (a person who is employed on a full or part-time basis in the supervision, preparation, planning, or service of meals for children)
   3 Parent or guardian (natural or legal parent, foster parent and/or other adult with full responsibility for a child's care)
   4 Other. Please specify: ____________________________

3. Approximately how many children do you teach, care for, supervise, or prepare meals for when performing the above mentioned function?
   __________children

4. In what food program(s) does your facility participate?
   1 Child Care Food Program
   2 National School Lunch Program
   3 School Breakfast Program
   4 Special Milk Program
   5 Summer Food Service Program
   6 None.

THANK YOU!

LIBRARY EVALUATION FORM

Please fill out this form and return it with the material you borrowed. Your response will help us improve our services.

General Information (please print)

Title of Borrowed Item: ______________________ **Date:** __________

Your Name: ______________________________________

Please circle the number next to the answer you choose.

1. For what type of facility do you work?

1 Public school
2 Private grade school
3 Day care center
4 Family day home
5 RCCI
6 Other. Please specify: ______________________

2. What is your function?

1 Educator (a teacher, administrator, health educator, teacher aide, nurse, and other personnel who work in instructional capacity)
2 Food service personnel (a person who is employed on a full or part-time basis in the supervision, preparation, planning, or service of meals for children)
3 Parent or guardian (natural or legal parent, foster parent and/or other adult with full responsibility for a child's care)
4 Other. Please specify: ______________________

3. Who and approximately how many saw the item you borrowed?

	WHO	HOW MANY
1	Self......................	________
2	Children in your facility	________
3	Co-workers...............	________
4	Food service personnel...	________
5	parents or guardians.....	________
6	Others. Please specify: ________________	________

4. How did you learn about the NET Library?

1 By attending a NET workshop
3 From a friend or co-worker
3 At a professional meeting or conference
4 Other. Please specify: ______________________

5. What is your overall rating of the borrowed item?

	Poor	Fair	Good	Excellent
The item's content......................	1	2	3	4
The way the content was presented......	1	2	3	4
How useful was the item to those who saw it................THANK YOU!......	1	2	3	4

NET Lending Library Collection
Material Evaluation Form

1. Title:

2. Subtitle:

3. Dewey Decimal #:

4. Cost:

5. Author(s):

6. Publisher/Distributor:

Name ____

____

Address ____

____

Telephone ____

7. Date of publication:

8. Category Type:

- Audio-Visual Media and/or

__ Slides
__ Slides/script
__ Slides/cassette
__ Filmstrip/script
__ Filmstrip/cassette
__ Film (16 mm)
__ Videotape (VHS-1/2")
__ Videotape (Beta-3/4")
__ Audiotape
__ Other (specify)

- Printed media

__ Curriculum guide
__ Curriculum w/visuals
__ Curriculum w/audio-visuals
__ Teaching aid
__ Resource guide
__ Book
__ Book/record
__ Fact sheet/pamphlet
__ Periodical
__ Other (specify)

9. Physical description (list parts/describe):

____ Pages ____ Color ____ Black & White ____ Other

Minutes (length)	Frames
________	________
________	________
________	________

10. Language Available:
____ English ____ Spanish
____ English/Spanish ____ Other

11. Subject matter indexing terms (5 maximum):
____
____
____

12. Target group choices (may select more than one):

__ Prenatal
__ Preschool
__ Kindergarten
__ Lower Elementary (1-3)
__ Upper Elementary (4-6)
__ Junior High (7 & 8)
__ High School (9-12)
__ Students
__ Parents
__ Teachers
__ General Adults
__ Food Service Personnel
__ Nutritionist
__ Child Care Provider

13. Central Theme:

14. Open-Ended Comments:

15. Numerical Evaluations - Score from 1 to 5 with 1 being the lowest and 5 being the highest quality indicator.

	1	2	3	4	5
Organization of Content	☐	☐	☐	☐	☐
Accuracy	☐	☐	☐	☐	☐
Motivational Level	☐	☐	☐	☐	☐

16. Annotation:

17. Include in catalog?

____ yes ____ no

18. Evaluator:

Name ______________________________ Date ____________________

APPENDIX B

EVALUATION INSTRUMENTS FOR NUTRITION AND LIFE SCIENCES WORKSHOP

NUTRITION AND LIFE SCIENCES

Office Use Only

Type
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Version
1 2 3
Workshop ID:

Exercise:______
Your Social Security Number:
________-________-________

Today's Date: Mo/Day/Yr
________/________/________

DIRECTIONS: Read each item carefully. For each item **CIRCLE** the number nect to the **ONE BEST ANSWER.**

1. According to the "Vee" method of inquiry, what is a vitamin C laboratory experiment?

    1. A value claim that refers to the worth of sulfating agents?
    2. A concept that is included in the Molecular Theory?
    3. A principle that links two sulfating concepts together?
    4. A record that keeps account of an event?

    [✓ 5.] An event that should describe laboratory procedures?

2. Which of the following terms would you used to construct a "Vee" Diagram?

    1. Value claim
    2. Knowledge claims
    3. Focus questions
    4. Events

    [✓ 5.] All of the above

3. What does concept mapping refer to?

    1. Developing a "Vee" shaped diagram that incorporates different levels of scientific knowledge
    2. Mapping scientific knowledge into a "thinking side" and a "doing" side of a "Vee" shaped diagram
    3. Relating abstract knowledge to concrete knowledge, and visa versa
    4. Both 1 and 2
    5. 1, 2, and 3

4. Which of the following is consistent with the "Vee" heuristic method of inquiry or learning?

   1. Problem solving, conceptual thinking, and knowledge integrative skills
   2. Concept mapping strategies
   3. Understanding and use of knowledge in real life situations
   4. Rote memorization of knowledge and facts about a given subject
   5. 1, 2, and 3

5. To accurately estimate the total energy need of the body, which of the following are measured?

   1. Energy effect of food digestion
   2. Basal metabolic rate when the body is at complete rest
   3. Basal metabolic rate, and energy needed for physical activity and food digestion
   4. Number of calories burned during physical activity and basal metabolic rate
   5. Basal metabolic rate during physical activity

6. Which units are used to accurately express the energy value of food commonly called a calorie?

   1. Kilo calories
   2. Grams
   3. Heat units
   4. Energy units
   5. Any of the above

7. Which of the following is higher in calories?

   1. 2.5 grams of starch
   2. 3 grams of sugar
   3. 3 grams of starch
   4. 1.5 grams of oil
   5. 3 grams of protein

8. Which of the following statements maybe used to describe the "typical" fast food meal?

   1. Higher in fat and lower in complex carbohydrates than the dietary goals recommend
   2. Low in calcium, vitamin C, and vitamin A
   3. Higher in simple carbohydrates, and fat, and lower in complex carbohydrates than the dietary goals recommend
   4. High in fat, calories, sodium, and low in fiber
   5. All of the above

9. How would you define obesity?

   1. Excessive body weight
   2. Excessive body mass in comparison to height
   3. Excessive body fat
   4. Total body mass (including muscle, bone, fat, water)
   5. All of the above should be considered

10. Which of the following more closely approximates the recommended dietary goals for the percent of calories from carbohydrate, protein, and fat in meals?

1. 40-50% carbohydrates, 25% protein, 25% fat
2. 30-40% carbohydrates, 15% protein, 30% fat
3. 50% carbohydrates, 30% protein, 20% fat
4. 50-60% carbohydrates, 10-15% protein, < 30% fat
5. 50% carbohydrates, 40% protein, < 10% fat

11. Which of the following is considered in an overall long term successful plan for weight maintenance or loss?

1. Routine exercise with a "safe" reduction in daily calories
2. Behavior modification with emphasis on long term small changes in eating and exercise habits
3. Daily choices from a variety of low calorie, nutrient-dense foods to provide needed nutrients and balance.
4. Reduction in calories below 1000, with 1 day a week fast to purge the body.
5. 1, 2, and 3

12. Of the four food components that provide calories or food energy, which of the combined components yield the greatest number of calories per gram?

1. Carbohydrate and alcohol
2. Fat and alcohol
3. Carbohydrate and fat
4. Carbohydrate and protein
5. Protein and fat

13. Which of the following facts limits the techniques used to estimate the body composition of teenagers?

1. Adolescents are in an active state of growth and body changes
2. Changes in the body composition of adolescents are due to the growth spurt and occur at different ages and rates
3. Until puberty, boys and girls have similar body compositions, including 15-20% body fat
4. Very few if any "standard" tables or measurements on body composition exist for teenagers because their bodies change so rapidly
5. All of the above are true

14. Which of the following is considered a sign of energy balance?

1. Weight is held constant
2. Energy input is less than energy output
3. Aerobic exercise is undertaken at least 3 times per week
4. Energy input equals energy output
5. 1 and 4 only

15. Which of the following statements accurately describes the nutrient contents of whole and non fat milk?

    1. Non fat milk is lower in calories; and vitamins A, D, E, and K than whole milk
    2. The protein and calcium content of non fat milk is lower than that of whole milk
    3. Changing from whole milk to non fat milk reduces fat and calories, without compromising the loss of other nutrients
    4. Both 1 and 2
    5. 1, 2, and 3

NUTRITION AND LIFE SCIENCES

Office Use Only
Version:
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1 [✓ 2] 3
ID ____________

Exercise B
Your SSN:
K - E - Y

Today's Date:
_____/_____/_____
MM DD YY

Directions: Read each item carefully. For each item, circle the number that goes with the one best answer for that item.

1. Which of the following terms would you use to construct a "Vee" Diagram?

    1. Knowledge claims
    2. Events
    3. Value claim
    4. Focus questions
    [✓ 5.] All of the above

2. Which of the following describes concepts?

    1. They are a component of the conceptual Domain of the Vee
    2. They are shared socially
    3. They are formed on the basis of knowledge or experience
    [✓ 4.] All of the above
    5. None of the above

3. According to the "Vee" method of inquiry, what is a vitamin C laboratory experiment?

    1. A principle that links two sulfiting concepts together
    2. A value claim that refers to the worth of sulfiting agents
    3. A concept that is included in the Molecular Theory
    [✓ 4.] An event that should describe laboratory procedures
    5. A record that keeps account of an event

4. Which of the following is consistent with the "Vee" heuristic method of inquiry or learning?

    1. Problem solving, conceptual thinking, and knowledge integrative skills
    2. Observing behavior of others
    3. Understanding and use of knowledge in real life situations
    4. Rote memorization of knowledge and facts about a given subject
    [✓ 5.] 1, 2, and 3

5. What is another more accurate term to express the energy value of food commonly called a Calorie?

   1. Heat units
   [✓ 2.] Kilocalories
   3. Grams
   4. Energy units
   5. Any of the above

6. To accurately estimate the total energy need of the body, which of the following are calculated?

   [✓ 1.] Basal metabolic rate, and energy needed for physical activity and food digestion
   2. Number of calories burned during physical activity and basal metabolic rate
   3. Energy effect of food digestion
   4. Basal metabolic rate when the body is at complete rest
   5. Basal metabolic rate during physical activity

7. What is an accurate definition of obesity?

   1. Excessive body mass in comparison to height
   2. Excessive body weight
   3. Total body mass (including muscle, bone, fat, water)
   [✓ 4.] Excessive body fat
   5. All of the above should be considered

8. Which of the following statements may be used to describe a "typical" fast food meal such as hamburger, french fries, and a soft drink?

   1. Higher in fat and lower in complex carbohydrates than the dietary goals recommend
   2. Low in calcium, vitamin C, and vitamin A
   3. Higher in simple carbohydrates, and fat, and lower in complex carbohydrates than the dietary goals recommend
   4. High in fat, calories, sodium, and low in fiber
   [✓ 5.] All of the above

9. Which of the following is higher in calories?

   [✓ 1.] 1.5 grams of oil
   2. 3 grams of starch
   3. 3 grams of protein
   4. 3 grams of sugar
   5. 2.5 grams of starch

10. Which of the following statements accurately describes the nutrient contents of whole and non fat milk?

   1. Non fat milk is lower in calories and lower in vitamins A, D, E, and K than whole milk
   2. The protein and calcium content of non fat milk is lower than that of whole milk
   [✓ 3.] Changing from whole milk to non fat milk reduces fat and calories, without compromising the loss of other nutrients
   4. Both 1 and 2
   5. 1, 2, and 3

11. Which of the following is considered in an overall long term successful plan for weight maintenance or loss?

    1. Routine exercise with a "safe" reduction in daily calories
    2. Behavior modification with emphasis on long term small changes in eating and exercise habits
    3. Daily choices from a variety of low calorie, nutrient-dense foods to provide needed nutrients and balance.
    4. Reduction in calories below 1000, with 1 day a week fast.
    [✓ 5.] 1, 2, and 3

12. Of the four food components that provide calories or food energy, which of the combined components yield the greatest number of calories per gram?

    [✓ 1.] Fat and alcohol
    2. Carbohydrate and protein
    3. Carbohydrate and fat
    4. Protein and fat
    5. Carbohydrate and alcohol

13. Which of the following is considered a sign of energy balance?

    1. Weight is held constant
    2. Energy input is less than energy output
    3. Aerobic exercise is undertaken at least 3 times per week
    4. Energy input equals energy output
    [✓ 5.] 1 and 4 only

14. Which of the following more closely approximates the recommended dietary goals for the percent of calories from carbohydrate, protein, and fat in meals?

    1. 50% carbohydrates, 30% protein, 20% fat
    [✓ 2.] 50-60% carbohydrates, 10-15% protein, < 30% fat
    3. 30-40% carbohydrates, 15% protein, 30% fat
    4. 40-50% carbohydrates, 25% protein, 25% fat
    5. 50% carbohydrates, 40% protein, < 10% fat

15. Which of the following facts limits the techniques used to estimate the body composition of teenagers?

    1. Adolescents are in an active state of growth and body changes
    2. Changes in the body composition of adolescents are due to the growth spurt and occur at different ages and rates
    3. Until puberty, boys and girls have similar body compositions, including 15-20% body fat
    4. Very few if any "standard" tables or measurements on body composition exist for teenagers because their bodies change so rapidly
    [✓ 5.] All of the above are true

Texas
Department
of
Human Services

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Brownsville

Dear Workshop Participant:

The Nutrition Education and Training (NET) program enjoyed having you as a participant in its Nutrition and Life Sciences workshop this year. We now seek your help in evaluating the effectiveness of the workshop and improving it for future participants.

Enclosed is a copy of a follow-up test and attitude scale similar to those you filled during the workshop. Please fill both instruments and return to NET in the enclosed postage-paid envelope by October 7, 1991. Your response to the test and the attitude scale is confidential, and will be used only to improve the workshop for future participants.

Thank you very much for helping us improve the NET program services. If you have any questions or need additional information, please contact Ms. Deborah Simpson, the NET program coordinator, at (512) 450-4816.

Sincerely,

Mahassen Ahmad

Mahassen Ahmad, Ph.D.
NET Program Evaluator
(512) 450-3041
MC 313-W

Enclosure

John H. Winters Human Services Center • 701 West 51st Street
Central Office Mailing Address P.O. Box 149030 • Austin, Texas 78714-9030
Telephone (512) 450-3011 • Call your local DHS office for assistance.

NUTRITION AND LIFE SCIENCES

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Exercise A
Your SSN:
____-____-____

Today's Date:
______/______/______
MM DD YY

Directions: Read each item carefully. For each item, circle the number that goes with the one best answer for that item.

1. What is another more accurate term to express the energy value of food commonly called a Calorie?
    1. Energy units
    2. Grams
    3. Heat units
    4. Kilocalories
    5. Any of the above

2. Which of the following is higher in calories?
    1. 2.5 grams of starch
    2. 3 grams of sugar
    3. 3 grams of protein
    4. 3 grams of starch
    5. 1.5 grams of oil

3. What is an accurate definition of obesity?
    1. Total body mass (including muscle, bone, fat, water)
    2. Excessive body mass in comparison to height
    3. Excessive body fat
    4. Excessive body weight
    5. All of the above should be considered

4. Which of the following describes concepts?
    1. They are shared socially
    2. They are a component of the Conceptual Domain of the Vee
    3. They are formed on the basis of knowledge or experience
    4. All of the above
    5. None of the above

5. Which of the following statements may be used to describe a "typical" fast food meal such as hamburger, french fries and a soft drink?

   1. Higher in simple carbohydrates, and fat, and lower in complex carbohydrates than the dietary goals recommend
   2. Higher in fat and lower in complex carbohydrates than the dietary goals recommend
   3. Low in calcium, vitamin C, and vitamin A
   4. High in fat, calories, sodium, and low in fiber
   5. All of the above

6. Which of the following terms would you use to construct a "Vee" Diagram?

   1. Focus questions
   2. Value claim
   3. Knowledge claims
   4. Events
   5. All of the above

7. Which of the following is consistent with the "Vee" heuristic method of inquiry or learning?

   1. Rote memorization of knowledge and facts about a given subject
   2. Observing behavior of others
   3. Problem solving, conceptual thinking, and knowledge integrative skills
   4. Understanding and use of knowledge in real life situations
   5. 1, 2, and 3

8. According to the "Vee" method of inquiry, what is a vitamin C laboratory experiment?

   1. A value claim that refers to the worth of sulfiting agents
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   3. An event that should describe laboratory procedures
   4. A concept that is included in the Molecular Theory
   5. A principle that links two sulfiting concepts together

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   1. Weight is held constant
   2. Energy input is less than energy output
   3. Energy input equals energy output
   4. Aerobic exercise is undertaken at least 3 times per week
   5. 1 and 3 only

10. Which of the following more closely approximates the recommended dietary goals for the percent of calories from carbohydrate, protein, and fat in meals?

    1. 50% carbohydrates, 40% protein, < 10% fat
    2. 50-60% carbohydrates, 10-15% protein, < 30% fat
    3. 50% carbohydrates, 30% protein, 20% fat
    4. 30-40% carbohydrates, 15% protein, 30% fat
    5. 40-50% carbohydrates, 25% protein, 25% fat

11. Of the four food components that provide calories or food energy, which of the combined components yield the greatest number of calories per gram?

    1. Carbohydrate and protein
    2. Carbohydrate and alcohol
    3. Carbohydrate and fat
    4. Protein and fat
    5. Fat and alcohol

12. To accurately estimate the total energy need of the body, which of the following are calculated?

    1. Basal metabolic rate, and energy needed for physical activity and food digestion
    2. Basal metabolic rate during physical activity
    3. Basal metabolic rate when the body is at complete rest
    4. Number of calories burned during physical activity and basal metabolic rate
    5. Energy effect of food digestion

13. Which of the following is considered in an overall long term successful plan for weight maintenance or loss?

    1. Reduction in calories below 1000, with 1 day a week fast
    2. Behavior modification with emphasis on long term small changes in eating and exercise habits
    3. Daily choices from a variety of low calorie, nutrient-dense foods to provide needed nutrients and balance
    4. Routine exercise with a "safe" reduction in daily calories
    5. 2, 3, and 4

14. Which of the following facts limits the techniques used to estimate the body composition of teenagers?

    1. Until puberty, boys and girls have similar body compositions, including 15-20% body fat
    2. Changes in the body composition of adolescents are due to the growth spurt and occur at different ages and rates
    3. Very few if any "standard" tables or measurements on body composition exist for teenagers because their bodies change so rapidly
    4. Adolescents are in an active state of growth and body changes
    5. All of the above are true

15. Which of the following statements accurately describes the nutrient contents of whole and non fat milk?

    1. Non fat milk is lower in calories and lower in vitamins A, D, E, and K than whole milk
    2. The protein and calcium content of non fat milk is lower than that of whole milk
    3. Changing from whole milk to non fat milk reduces fat and calories, without compromising the loss of other nutrients
    4. Both 1 and 2
    5. 1, 2, and 3

ATTITUDE SCALE

FOR NUTRITION AND LIFE SCIENCES WORKSHOP

Please CIRCLE the number that best describes how you feel about each of the following statements.

		Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
1.	The use of the "Vee" heuristic enhances the student's understanding of home economics concepts and principles.	1	2	3	4	5
2.	We should use the "Vee" method of inquiry to clarify the purpose of laboratory experimentation in home economics.	1	2	3	4	5
3.	The "Vee" method of inquiry is the proper tool to teach home economics to junior high students.	1	2	3	4	5
4.	The "Vee" method of inquiry is effective in teaching students how to think as well as how to acquire facts.	1	2	3	4	5
5.	Everyone who is obese is overweight and everyone who is overweight is obese.	1	2	3	4	5
6.	Food labels guide us in planning nutritious meals.	1	2	3	4	5
7.	Fast food spoils children's and teenager's eating habits and should be avoided.	1	2	3	4	5
8.	It is highly unlikely that people who typically drink whole milk will switch to lowfat or skim milk.	1	2	3	4	5
9.	Metabolism can be effectively increased with drugs to control obesity.	1	2	3	4	5
10.	It is important to recognize that calorie needs change over time.	1	2	3	4	5
11.	A high fat diet is linked with increased risk of chronic diseases such as stroke, and heart disease.	1	2	3	4	5
12.	Fats contain more than twice as many calories as protein and carbohydrate.	1	2	3	4	5

TEXAS DEPARTMENT OF HUMAN SERVICES
COURSE EVALUATION

Course: ______________ Instructor: __________________ Dates: ____________

Directions: Please check the appropriate blanks in the following.	KEY				
	1 Strongly Agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree

The Course:	1	2	3	4	5
1. Main points/objectives were clear.					
2. Was well-organized.					
3. Was well-paced/kept my interest.					
4. Contained the right amount of information.					
5. Gave me enough opportunity to practice the new skills.					
6. Gave enough feedback on how well I used the new skills.					

Comments:

____

____

____

The Materials:	1	2	3	4	5
1. Were well-organized/easy to use.					
2. Directly related to the subject being taught.					
3. Were sequenced logically to help me understand.					
4. Represented real-life, believable situations.					
5. Contained the right amount of information.					
6. Gave me enough opportunity to practice the new skills.					
7. Gave enough feedback on how well I used the new skills.					
8. Used the right level of vocabulary.					
9. Were visually appealing.					

Comments:

____

____

____

TEXAS DEPARTMENT OF HUMAN SERVICES
COURSE EVALUATION

Directions: Please check the appropriate blanks in the following:

KEY				
1 Strongly Agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree

The Instructor:	**1**	**2**	**3**	**4**	**5**
1. Was knowledgeable about the subject.	___	___	___	___	___
2. Was well-prepared for class.	___	___	___	___	___
3. Encouraged class participation.	___	___	___	___	___
4. Generated meaningful class discussion.	___	___	___	___	___
5. Actively listened to understand others.	___	___	___	___	___
6. Answered questions effectively/non-judgmentally.	___	___	___	___	___
7. Illustrated the course with useful examples.	___	___	___	___	___
8. Used class equipment competently.	___	___	___	___	___
9. Referenced class materials appropriately.	___	___	___	___	___

Comments:

Could you give us some recommendations for improving this course?

Thanks for your input!

APPENDIX C

EVALUATION INSTRUMENTS FOR ETHNIC RECIPES/CYCLE MENU PROJECT

Texas
Department
of
Human Services

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Dear Child Care Food Program Day Care Center Contractor:

During December 1989, the staff of Texas Nutrition Education and Training (NET) program sent you a FREE set of standardized ethnic recipe cards. A FREE six-week cycle menu, incorporating the NET standardized ethnic and Child Care Food Program Quantity recipes was also mailed to you in January 1990.

We now seek your help in evaluating the ethnic recipes and the cycle menu you received. Your answers to the enclosed opinion survey will help us decide how to improve the ethnic recipes and cycle menu and how to improve our nutrition education services. Please use the enclosed postage-paid envelope to return the completed survey to us by May 29, 1990.

Thank you very much for helping us improve the NET program services. If you have any questions or need additional information, please contact Ms. Abigail November, the NET program coordinator, at (512) 450-4816.

Sincerely,

Mahassen Ahmad, Ph.D.
NET Program Evaluator
MC 654-W

Enclosure

John H. Winters Human Services Center • 701 West 51st Street
Central Office Mailing Address P.O. Box 149030 • Austin, Texas 78714-9030
Telephone (512) 450-3011 • Call your local DHS office for assistance.

NET ETHNIC RECIPES AND CYCLE MENU

OPINION SURVEY FOR DAY CARE CENTERS

General Information:

Center's Agreement (TX) Number: ________-________
Number of Children in Day Care: ________
Age Range of Children: __________________

DIRECTIONS: For each question, please enter or circle the answer that best represents your opinion of the ethnic recipes and cycle menu you received.

Ethnic Recipes:

1. About how many times have you used the ethnic recipes in serving meals to the children in your care?

RECIPE NUMBER OF TIMES SERVED

Main Dishes
Chicken Chalupas.....................______
Veracruz Bean Tortillas..............______
Tortilla and Cheese Casserole........______
Chili Corn Chip Bake.................______
Crunchy Chinese Tuna Salad...........______
Tuna Chow Mein Casserole.............______
Chinese Beef Patties.................______
Italian Fish Roll-ups................______
Turkey Frittata......................______
Hopping John.........................______
Creole Red Beans.....................______
Creole Wieners.......................______
Polynesian Pizza.....................______
Hungarian Goulash....................______
Spicy Ground Beef....................______
Pasticcio (Baked Macaroni)...........______

Cereal Products
Mexican Rice.........................______
Baked Cheese Grits...................______
Indian Pilaf.........................______

Vegetables
Chili Ricotta Potatoes...............______
Corn and Green Chili Casserole.......______
Corn and Zuccini Mexicana............______
Gingered Carrots.....................______

RECIPE NUMBER OF TIMES SERVED

Vegetables
Chinese Mixed Vegetables............______
Vegetable Curry.....................______

Soup
Mexican Corn Soup...................______

Dessert
American Indian Cornmeal Cookies....______

If you haven't used the recipes AT ALL, then skip to question 12.

2. Does having the recipes standardized for 12 and 24 (or 25) servings assist you in adjusting the recipes for the number of children you are serving?

Yes No

3. Is the list of contributions to the meal pattern requirements easily adjusted for the age levels of children in your care?
Yes No

4. Are some of the ingredients used in the ethnic recipes difficult to find?
Yes No
If you answered yes, please list the ingredients that are difficult to find: ______________________________
____

5. Are some of the ingredients used in the ethnic recipes more expensive than the ingredients you usually use?
No Yes
If you answered yes, please list the ingredients that are expensive: ______________________________
____

6. Do you prepare the recipes EXACTLY as they are written?
Yes No
If your answered no, please state the recipe(s) you modified and the modification(s) you made:

RECIPE	MODIFICATION
______	______
______	______
______	______

(You may continue on the back of this page)

7. How expensive are the ethnic recipes to prepare compared to your usual recipes?
More Expensive Less Expensive About the Same

8. Compared to the time you spend preparing your usual recipes, how much time do you spend preparing the ethnic recipes?
More Time Less Time About the Same

9. How is the plate waste of the ethnic recipes compared to the plate waste of your usual recipes?
Lower Higher About the Same

10. Did you encounter any problems in preparing the recipes?
Yes No
If you answered yes, please specify: ____________________

11. Did you encounter any problems in portioning the recipes for appropriate serving sizes?
Yes No
If you answered yes, please specify which recipes: ____________________

12. What suggestions do you have that would make the NET ethnic recipes better/more useful to you?

(You may continue on the back of this page)

Cycle Menu:

1. How many times did you use the NET cycle menu?

a	b	c	d
0 or 1	2 or 3	3 or 4	5 or more

If you haven't used the cycle menu AT ALL, then skip to question 4.

2. Does the cycle menu help in reducing the time required for menu planning?
Yes No

3. Did you find it necessary to substitute items in the cycle?

Yes No

If you answered yes, please specify the reason(s):
a - Seasonal availability of foods
b - USDA donated foods
c - Holidays or special celebrations
d - Emergency substitutions
e - Expense
f - Preparation time
g - Other (please specify): ______________________________
____

4. In your opinion, what is a practical time length for a cycle menu?

a	b	c	d
2 weeks	4 weeks	6 weeks	Other

5. What suggestions do you have that would make the NET cycle menu better/more useful to you?

____
____
____
____
____
____
____

THANK YOU FOR YOUR HELP

Texas
Department
of
Human Services

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Dear Child Care Food Program Day Home Provider:

During December 1989, the staff of Texas Nutrition Education and Training (NET) program sent your sponsor FREE standardized ethnic recipe cards. FREE copies of a six-week cycle menu, incorporating the NET standardized ethnic recipes was also mailed to your sponsor in January 1990. Your sponsor was to provide you with copies of the ethnic recipes and cycle menu.

We now seek your help in evaluating the ethnic recipes and the cycle menu you received. Your answers to the enclosed opinion survey will help us decide how to improve the ethnic recipes and cycle menu and how to improve our nutrition education services. Please use the enclosed postage-paid envelope to return the completed survey to us by May 29, 1990.

Thank you very much for helping us improve the NET program services. Your sponsor has been notified that you received this survey. If you have any questions or need additional information, please contact Ms. Abigail November, the NET program coordinator, at (512) 450-4816.

Sincerely,

Mahassen Ahmad, Ph.D.
NET Program Evaluator
MC 654-W

Enclosure

John H. Winters Human Services Center • 701 West 51st Street
Central Office Mailing Address P.O. Box 149030 • Austin, Texas 78714-9030
Telephone (512) 450-3011 • Call your local DHS office for assistance.

Texas Department of Human Services

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Dear Child Care Food Program Day Home Sponsor:

During December 1989, the staff of Texas Nutrition Education and Training (NET) program sent you FREE standardized ethnic recipe cards. FREE copies of a six-week cycle menu, incorporating the NET standardized ethnic recipes was also mailed to you in January 1990. You were to provide the day home providers you sponsor with copies of the ethnic recipes and cycle menu.

We are now seeking the help of the day home providers listed in the attached list to evaluate the ethnic recipes and the cycle menu they received. We are sending opinion surveys to these providers to complete and return in enclosed postage - paid envelopes by May 29, 1990.

Thank you very much for helping us improve the NET program services. If you have any questions or need additional information, please contact Ms. Abigail November, the NET program coordinator, at (512) 450-4816.

Sincerely,

Mahassen Ahmad, Ph.D.
NET Program Evaluator
MC 654-W

Attachment

John H. Winters Human Services Center • 701 West 51st Street
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NET ETHNIC RECIPES AND CYCLE MENU

OPINION SURVEY FOR DAY HOME PROVIDERS

General Information:

Name of Provider: ______________________________
Address of Provider: ____
____
Sponsoring Organization: ____
____

Number of Children in Provider's Care: ______
Age Range of Children: _________________________

DIRECTIONS: For each question, please enter or circle the answer that best represents your opinion of the ethnic recipes and cycle menu you received.

Ethnic Recipes:

1. About how many times have you used the ethnic recipes in serving meals to the children in your care?

RECIPE	NUMBER OF TIMES SERVED
Main Dishes	
Chicken Chalupas	______
Veracruz Bean Tortillas	______
Tortilla and Cheese Casserole	______
Chili Corn Chip Bake	______
Crunchy Chinese Tuna Salad	______
Tuna Chow Mein Casserole	______
Chinese Beef Patties	______
Italian Fish Roll-ups	______
Turkey Frittata	______
Hopping John	______
Creole Red Beans	______
Creole Wieners	______
Polynesian Pizza	______
Hungarian Goulash	______
Spicy Ground Beef	______
Pasticcio (Baked Macaroni)	______
Cereal Products	
Mexican Rice	______
Baked Cheese Grits	______
Indian Pilaf	______

6. How expensive are the ethnic recipes to prepare compared to your usual recipes?

More Expensive   Less Expensive   About the Same

7. Compared to the time you spend preparing your usual recipes, how much time do you spend preparing the ethnic recipes?

More Time   Less Time   About the Same

8. How is the plate waste of the ethnic recipes compared to the plate waste of your usual recipes?

Lower   Higher   About the Same

9. Did you encounter any problems in preparing the recipes?

Yes   No

If you answered yes, please specify: ____________________________

____

____

10. Did you encounter any problems in portioning the recipes for appropriate serving sizes?

Yes   No

If you answered yes, please specify which recipes: ______________

____

____

11. What suggestions do you have that would make the NET ethnic recipes better/more useful to you?

____

____

____

____

____

____

____

(You may continue on the back of this page)

Cycle Menu:

1. How many times did you use the NET cycle menu?

a	b	c	d
0 or 1	2 or 3	3 or 4	5 or more

If you haven't used the cycle menu AT ALL, then skip to question 4.

2. Does the cycle menu help in reducing the time required for menu planning?

Yes   No

3. Did you find it necessary to substitute items in the cycle?

Yes No

If you answered yes, please specify the reason(s):
a - Seasonal availability of foods
b - USDA donated foods
c - Holidays or special celebrations
d - Emergency substitutions
e - Expense
f - Preparation time
g - Other (please specify): ______________________

4. In your opinion, what is a practical time length for a cycle menu?

a	b	c	d
2 weeks	4 weeks	6 weeks	Other

5. What suggestions do you have that would make the NET cycle menu better/more useful to you?

THANK YOU FOR YOUR HELP

TEXAS

NET

NUTRITION EDUCATION & TRAINING

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PL 85-188

The Texas Department of Human Services NET Program is committed to assuring that program benefits are made available to all persons and provided to all eligible individuals without regard to race, color, national origin, age, sex, disability, political belief or religion. Any person who believes that he or she has been discriminated against in any NET Program activity should immediately contact the Administrator, Food and Nutrition Service, 3101 Park Center Drive, Alexandria, Virginia 22302.

TEXAS DEPARTMENT OF HUMAN SERVICES
1989-1992